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AGRICULTURAL HISTORY

The Quarterly Journal of the Agricultural History Society

Agricultural History is designed as a medium for the publication of research and documents pertaining to the history of agriculture in all its phases and as a clearinghouse for information of interest and value to workers in the field. Materials on the history of agriculture in all countries are included, and also materials on institutions, organizations, and sciences which have been factors in agricultural development. The Society is not responsible for the statements or opinions of contributors.

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THE DIARIES OF A NEBRASKA FARMER, 1876–1877

Edited by CLARENCE S. PAINE

Oklahoma City Libraries, Oklahoma City, Oklahoma

INTRODUCTION

On a hill overlooking the valley of the Little Blue, in the self-imposed obscurity of an unmarked grave, lie the remains of Edward Hawkes. For almost as long, his insignificant-appearing little pocket diaries for the years 1876 and 1877 lay in equal obscurity in the collections of my father. Their apparent insignificance, an impression contributed to by the brevity and unembellished nature of the daily entries and by the absence of any external evidence of their author's identity, caused them to be overlooked by the many booksellers, historians, and librarians who during the past thirty years have carefully picked over that once valuable collection of Americana.[1]

But obscurity and anonymity are not necessarily synonymous with insignificance. In the first place, one has only to scan the first few days' entries in either diary to know that they are the record of a farmer who lived near the town of Fairbury, Nebraska, when the agricultural economy there was still in the pioneering stage. Since the days of Hector Saint John de Crèvecoeur's *Letters of an American Farmer* (1782), autobiographical or day-by-day accounts of life on a frontier farm have been rare. Perhaps this sort of life, less romantic, less venturesome than that of the overland trail or of battle and bivouac, was likewise too wearisome to inspire writing. Whatever the reason for the rarity, no early farmer's diary can be regarded as insignificant.

In the second place, the first few entries reveal the author to have been an active member of the local grange, lyceum, school board, and dancing club and the editor of a local paper of some sort. Eventually he is disclosed as active in politics, first as a Republican, and in the following year as a Greenbacker. We can only guess that in the nineties he became a Populist. No such man is insignificant in the life of his community, and through references to these activities and to land transfers and other legal transactions, positive identification is possible.

Edward Hawkes, according to what was probably his own account as given to the compiler of an early history of Nebraska, "was born in the County of Kent, England, 1837. In 1860 [he] came to America and located in La Salle County, Illinois where he remained until 1864. He then started west and located in Jefferson County, Neb. . . .Had a friend who came with him."[2]

Various other accounts state that Hawkes came to the United States in 1851 with a William C. Smith and his wife, Elizabeth Middleton Smith. We can be reasonably certain that the "friend who came with him" to Jefferson County was this William C. Smith, or "Uncle Billy" as he became known. The records of La Salle County, Illinois, show that Hawkes was naturalized there on April 12, 1864.[3] Since the Federal laws governing naturalization required a minimum residence of five years, this fact would place the latest possible date for Hawkes' arrival in the United States as

[1] In the editing of these diaries I am indebted to Corrinne Bradshaw, Clerk of the Jefferson County Court, Francis Saulsbury, Real Estate Recorder, and Judge Samuel Gallamore. Through their interest and cooperation, records of the Jefferson County District Court, the Probate Court, and the Register of Deeds and the County Superintendent have been placed at my disposal. W. J. Moss and Frank Wells of Fairbury and Charles Kelly of Endicott, Nebraska, have given willing and valuable assistance through many personal recollections. Horace A. Hickok of Troy Grove and Homer H. Hankins and C. C. Tisler of Ottawa, Illinois, have lent a helping hand in matters relating to La Salle County, Illinois.

For seemingly endless patience as well as generous aid I am grateful to James C. Olson of the Nebraska State Historical Society and his staff. To my associates, Georgena Middleton and Virginia Owens of the Oklahoma City Libraries, I am indebted for help in the inevitable last minute revisions of copy and proof.

And, in this as in my every other task, I have had the enthusiastic assistance and criticism of my wife and of my mother in whose very blood runs a consuming interest in Nebraska history.

[2] A. T. Andreas, "Jefferson County," in *History of the State of Nebraska* . . . (Chicago, Western Historical Co., 1882), 1001.

[3] Letter from George L. Hunter, La Salle County Clerk, Nov. 19, 1947.

April 1859. A deed, dated January 16, 1860, to property in La Salle County, which was signed by the Smiths establishes their residence there prior to that date.[4]

The basis of the relationship between William and Elizabeth Smith and Hawkes is not known though legends in Jefferson County are not wanting. Whatever its roots, it was a living-working relationship which kept them together in success and failure for nearly half a century and ended only in death.

On April 3, 1866, after a journey of nearly a hundred miles, Hawkes filed Application No. 1002 for 160 acres under the Homestead Act of 1862 at the United States Land Office in Brownville, Nebraska.[5] The land was described as "the South East of Section five (5) in Township one (1) of Range three (3) East. . . ." He swore that he was "a single man over the age of twenty-one years . . . a citizen of the United States, that I have never borne arms against the government or given aid or comfort to its enemies" and that the said land was for his own use and settlement. He paid the sum of $14.00, this "being the amount of fee and one-half the compensation of Register and Receiver. . . ."

Several weeks later, on April 27, Smith filed a similar claim to an adjoining quarter.[6] Together the two men built a home to replace the cabin which they had occupied since coming to Nebraska in 1864.[7] During the next three decades, with the exception of a period in the eighties and nineties, the partnership continued. After the death of Smith in 1895, his widow once more took up housekeeping for Hawkes.

In 1870 the farm operated by Smith and Hawkes was given a census valuation of $3,000.[8] It was one of the seven farms in the total of fifty-seven reported for the Jenkins precinct (later Endicott) with a valuation in excess of $2,000 and was surpassed by only one with a valuation of $3,500. They valued their machinery at $50; 3 horses, 2 milch cows, 4 other cattle, and 5 hogs were valued at $500. They had improved 60 acres of their land and showed 50 acres of woodland and 180 acres as "other unimproved." From the 60 acres under cultivation that year they had produced 470 bushels of spring wheat, being surpassed by only two other operators with 800 and 621 bushels respectively. Their 800 bushels of corn was exceeded by five other farmers with from 900 to 2,000 bushels each. Their production of 140 bushels of oats, 300 pounds of butter, 20 tons of hay, and animals slaughtered or sold for slaughter valued at $150 was equaled or exceeded by only two or three others. Hawkes and Smith reported 2,000 bushels of potatoes, an amount which was 850 bushels more than any of their neighbors, and they were the only ones reporting any garden produce. Their estimated value of all farm production, including betterment and addition to stock, was $1,200. This was surpassed by only one other with a total of $1,300 and equaled by only one. Of the other fifty-four reporting the highest total was $852.

The next year, on November 23, 1871, Hawkes filed final proofs and affidavits on his homestead

[4] The property in question is described in the Office of the Recorder of La Salle County as "in Smith and Skinkle's Add. to Peru . . . platted by William C. Smith [etc.] April 2, 1865. . . ." Letter from Homer H. Hankins, Oct. 25, 1947.

[5] U. S. National Archives, Records of the General Land Office, Documents from file identified as Beatrice Final Certificate 477.

[6] See the map on page 5. This map was compiled to show, as accurately as possible, the extent of settlement in the region and the relative location of the majority of the persons with whom Hawkes recorded contact during the years 1876 and 1877. With the exception of one or two transfers of titles recorded in the office of the Jefferson County Register of Deeds, the source of the data was the United States Land Office Register of Patents for Jefferson County, a manuscript in the Nebraska State Historical Society with the binder's title, *R131 T1–6N . . . Jefferson & Saline. 143.* From this source were taken only the homesteads and the land grants to the State and to the St. Joseph and Denver City Railroad which were entered upon and upon which no cancellation was recorded prior to Dec. 30, 1877. To be complete and fully accurate the transfers of land titles through private and public sale and other means, recorded in the Register of Deed's office, should have been searched through 1877. Time has not permitted and, to that extent, the map is incomplete.

[7] The cabin, reportedly occupied by "Wild Bill" Hickok prior to his killing David Colbert McCanless in 1861, was removed in recent years to a park at Fairbury. In the rebuilding, however, most of the original appearance and plan was lost.

[8] Nebraska [Census] . . . Production of Agriculture in Jenkins Precinct, in the County of Jefferson . . . [1870] (manuscript in the library of the Nebraska State Historical Society with binder's title, *Nebraska 1870. Agriculture. Adams to York*).

claim. In these documents,[9] some further description of the place is given.

What happened to these people in the fateful grasshopper year of 1874 we can only surmise from other accounts which have come down to us. Some insight is given us by Hawkes' unembellished account of efforts to meet what must have seemed a certain threat of a comparable invasion between April 1 and June 24, 1877. The grim determination of those who had survived the "plague year" is clear. Their desperation can only be felt as one reads of their counterattack with shovels, patented catchers, rollers, and fire—of men battling desperately against insects, insects measured in the hundreds of bushels, millions of "hoppers" coming upon the rye and wheat fields.

In 1880 and 1881 Hawkes, along with others, founded the village of Endicott and thereafter, because of his efforts to salvage his investments in that project and the state of his health, he became less actively engaged in farming.

Hawkes did plant a vineyard, the vestiges of which may be seen today. Wine made from it, at first for his own consumption in his search for relief from pain, later became his only stock in trade. It is told that in his last years, so crippled that he was unable to dress, he would drape himself in a Mother Hubbard and peddle wine from a chair on his porch. At his death he left to his sole heir, Elizabeth Smith, only the place on which they lived and a few barrels of homemade wine.

The life story of "Old Ed" is too colorful, too full of romance, humor, and tragedy, of comedy and pathos to be told in limited space. Although his diaries give hints of this story, they are here published because of their value as a source for Jefferson County history and for the insight which they give into the life of a homesteader in the Missouri Valley.

However, I cannot refrain from letting Hawkes relate his own passing. To the reader of the diaries it will be immediately apparent that as early as 1876 Hawkes was suffering from "rheumatism." From the testimony of those who knew him in his later years, we know that the pain grew steadily more intense and that the last six or eight years of his life were spent in bed as a hopeless cripple. On the evening of November 25, 1902, "Liz" Smith, who was keeping house for him, found Hawkes dead and a note addressed to the editor of the *Fairbury Journal*. It read:

Epitaph

For nearly six years we've been crippled a lot,
Paid hard cash for help, but torture we got,
When help would not come,
we drank laudanum,
And struck out for Hell, from Endicott.
Yours Truly,
Ed Hawkes.

[9] See the file referred to in footnote 5.

THE DIARIES

January 1876

1, Sat. Caught one mink[10]

2, Sun. Went down to Wolfs ford to see the United Brethern Baptized[11]

3, Mon. Cutting wood for the house 1 half day

4, Tues. Splitting Post

5, Wed. Cutting Forks

6, Thurs. Went to Fairbury Diary 50 Harness 10 whiskey 60 P.O. Box 1.00 Rope 15 Cling 50 Charlie 1.00 [total] 3.85

7, Fri. Commenced to plow on Smiths

[10] In the following transcription the punctuation, spelling, and capitalization of the original diaries are scrupulously retained and are unencumbered by *sic* or ! which, while demonstrating that the editor knows the correct spelling, would impede the reader. Occasionally, when it has seemed that additions or corrections were essential to understanding, punctuation, missing letters or words, signs, etc., have been supplied in brackets. In the original diaries the end of a line is often tantamount to punctuation or otherwise contributes to clarity; in such instances the line ending has been preserved by double spacing between it and the first word of the following line rather than by the addition of commas, periods, etc. Asterisks have been used to indicate the omission of words that are illegible or repetitions.

Because the diary entries include a large number of personal names, many of which are frequently repeated, it has seemed better to provide the Biographical Directory on pages 26–31 rather than encumber the footnotes with the repetitions and cross references which would otherwise be necessary.

[11] Wolf's Ford across Little Blue River was on the homestead of John Wolf southeast of the Hawkes farm. See the map on page 5.

The service here noted was probably conducted by the Rev. Ives Marks who organized the United Brethren Church in Jefferson County. He is reputed to have preached the first sermon in the county in 1862. Andreas, "Jefferson County," 992.

Breaking with his team in the afternoon Started our Lyceum in the evening at Hanks Resolved That There is more enjoyment in poverty than in Riches. Decision Neg[ative].

8, Sat. Caught one mink Plow till noon Went to the grange and Installed the officers[12] about 140 persons present Got home Sunday morn 2.20 A M. Mrs. Smith lost her regalia sent Smith for it and then went herself

9, Sun. Paid Milt a visit About noon. done up the chores and then went to see Monroe found Jule and J G. H at home at night.

10, Mon. Went to my traps Went to the grange at night. appointed Chairman on Finance Settled With the grange Paid 20.83.

11, Tues. Paid Monroe a visit Made out a contract for hank for his house for a school[13]

12, Wed. Cutting stove wood in the Timber. Lawrence Kay paid us a visit. would not stay all night. Went to the Lyceum Discussed Art vs Nature Decision in the Aff[irmative.]

13, Thurs. Served a notice on Charity Crites.[14] Chopping wood. Paid Milt a visit he got ducked Jimison[,] Cling, & Jule paid us a visit Euchre till midnight

14, Fri. Caught a Raccoon Cutting Railcuts and Stove wood Paid Crites a visit in the evening

15, Sat. Went to Fairbury with Monroe, to the Lyceum National Banks,[15] Abolition Supper 25 Cigar 10 Candies 25 Whiskey 20 Tobacco 50 Got home at one oclock

16, Sun. Settled with Smiths folk All square up till New years day. he is to let me have Seven acres of breaking free for 1 year

17, Mon. Caught a beaver and Wild cat

18, Tues. Split about 50 red elm rails

19, Wed. Sawed up an Oak log on the river

20, Thurs. Let Rachel have 6½ lbs beef at 8 cts due 50 cts Smith went to Indian Creek Sharpened rails

21, Fri. Went to Fairbury with Mon, Jule & Jamieson. Whiskey 90 Sieve 50 Tobacco 2.00 Lunch 75

22, Sat. Went to the grange trial, acted as counsel for C Crites vs J G H. Mrs. Crites owned up and said She was sorry and asked forgiveness. which was granted grange dues 30[¢] Mrs Crites [dues] 30[¢] Paid J G H 10.00 on School fund making 30.00 3.00 to much

23, Sun. Paid Milt and Cling a visit. Jule & J. G H Spent the eve with us At euchre & Staid all night

24, Mon. Splitting and backing wood out from the river

25, Tues. Split some stakes and backing wood out from the river

26, Wed. Went to the Lyceum Discussed Indians have a Just cause to complain of the treatment of the whites. Aff[irmative] got it[16]

27, Thurs. Cutting up a tree top

28, Fri. Splitting rails

29, Sat. Paid 25 cts for T F Warden and 1.00 for a pack of cards through the grange

30, Sun. Staid at home

31, Mon. Staid at home

February 1876

1, Tues. Staid at home cold

[12] Mount Vernon Grange, No. 564, was originally organized under the notice of organization filed with the Patrons of Husbandry, National Grange, which is dated Apr. 3, 1874 and signed by Ed Hawkes as Master and Duncan Campbell as Secretary. Photostatic copy of the original application in the Nebraska State Historical Society with the binder's title, *Nebraska Patrons of Husbandry*, Vol. 4.

[13] The "house" was the dugout of Henry ("Hank") Crites, according to Charles Kelly, now living at Endicott, who first attended school there in 1876. See the map on page 5. According to a personal interview on July 29, 1946, John G. Hollenbeck was the teacher at that time. The earliest records of this district, No. 7, in the office of the Jefferson County Superintendent of Schools are for 1878 at which time Hawkes is shown as Treasurer. He was serving in this capacity at least as early as January 1876. See also the entries for Jan. 22, Feb. 2, and Mar. 23, 1876.

[14] The notice was for a "Grange trial" apparently occasioned by some personal affront by Charity Crites to John G. Hollenbeck, the local school teacher. See the entry for Jan. 22.

[15] "Tonight the Society meets at the school house [Fairbury]. Program: questions for debate—'Should the National Banking System be repealed?' Warren, Saxon and Kirkland in the affirmative; Freeman Peose and Pearson in the negative; oration, Harbine; reading, Stevens; essay, B. Reeve." *Fairbury Gazette*, Jan. 15, 1876.

[16] This decision is especially interesting when it is realized that an "Indian scare" had gripped the county only 7 years before and that actual hostilities, in which William Smith among others was severely wounded, had occurred in 1867.

ED HAWKES COUNTRY
JEFFERSON COUNTY NEBRASKA
1861 - 1877
BEING PARTS OF TOWNSHIPS 1 AND 2 IN RANGES 2, 3, AND 4 EAST; SHOWING ORIGINAL LAND HOLDERS, STAGE AND RAIL ROUTES.
BY
CLARENCE S. PAINE
1946
State of Nebraska
Sections 19, 30, 31; T2, R4
Oregon Trail
Blue River
Little Blue
Smith C.
Hawkes - Smith
Fairbury
Steele City 7½ Miles
Evans
Gamt
Merrill
Warren
Partlow
Fall
Gantt
Groves
Mather
Noble
Shoff
Reno
Zweifel
Roy
Howell
Rhodes
Baker
Yates
Nance
Higgins
Ohler
Byers
Beardsley
Wemple
Weeks
Woodford G.
McDowell
H. Yates
A. Yates & Spates
Welton
Bender
Hunger-ford
Groves
Cowles
Darrow
Kirk
Meaney
Clark
Swingle
Walker
Graham
Campbell
Voss
Forsyth
Archer
Flanders
McCreary
Friday
Foreman
Gill
Hughes
Henery
Pearson
Wm. C.
Bowen
Conner
Steinmetz
St. Joe & D.C. RR.
Thomas Kelly
Osborn
Shewalter
Adam
Crites
Duncan Campbell
Dillon
Johnston
Coatney
John P. Dosch
John Wolf
Hugh U. Andrews
Amos Wiley
David Morgan
Wm. Wilkins
John Mitcham
Donald Campbell
Willy
H. D. Merrill
Rohrbaugh
Spencer Markham
Ann Hughes
W. Hughes
Jennie A. Wells
John Wells
Blake
St. Joe & D.C. R.R.
State of Nebraska
A. Reade
Phelps
Mc Nair
Zweifel
D.C. Jenkins
Goldsberry
B. Goldsberry
G. James
J. Hughes
John Hollenbeck
Roy
Howell
Baker
Rhodes
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Sec. 5
Sec. 4
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Sec. 13
Sec. 12
Sec. 11
Sec. 10
Sec. 9
Sec. 8
Sec. 7
Sec. 6
Sec. 5
Sec. 4
Sec. 3
Sec. 2
Sec. 1
Sec. 36

2, Wed. School fund Teachers $76.61[17] Special $50.00 tomorrow [*sic*] 126.61 went to the Lyceum Edited the Truth Seeker[18]

3, Thurs. Staid in Fairbury last night Bill 2.00 [Fairbury] gazette 2.00

4, Fri. Came home from fairbury with Mon

5, Sat. Went to Fairbury to hear Donald Campbell suit put off till 1 oclock next Wednesday. Knoble for rape next Monday 1 oclock Paid 1.40 .50 25 20 reg to Stors 25 [total] 2.60

6, Sun. J G H staid with us last night. he reciepted for ex[press] pkg. 15 E A Brockway

7, Mon. J G H Staid with us last night. Went to fairbury to hear Knobles trial for incest[19] paid punch & Judy 25 Supper at Dooleys 25

8, Tues. Covered corn cribs

9, Wed. Went to plough on the sod

10, Thurs. Ploughing

11, Fri. Ploughing

12, Sat. Ploughing Got a new deck of cards through the grange. Jule[,] J. G. H.[,] Jamieson & Cling. played euchre till 1 oclock

13, Sun. Caught a wild cat

14, Mon. Splitting rails

15, Tues. Hunting with Kay Caught a coon

16, Wed. Went to Fairbury with Ben. he Starts to the Black hills to night with Lawrence Kay Apples 25 Tobacco 1.00

17, Thurs. Plough in the afternoon

18, Fri. Caught a beaver Plough in afternoon Went to Hoppee dance

19, Sat. Went to T. F. Wardens sale Iron wedges and rings 1.00 Beer, Pool, Whiskey .70

20, Sun. Jule paid us a visit and Staid all night

21, Mon. Killed Betty

22, Tues. Sold Adam a quarter of Beef at 6 cents 131 lbs $7.86 Went to Fairbury 75 [Received for] Hide 2.85 Furs 12.00 [Paid out for] 2 pr socks 1.35 42 Indianapolis Sun[20] 1.50 1 pint Whiskey 1.00 [1 pint] Oil 40 Billiards 25

23, Wed. Caught a beaver Sharpened rails

24, Thurs. Traded for Milts Farm[21]

25, Fri. Went to Fairbury Lay on plow[22] 4.00 Candy 75 Whiskey 1.05 Ball to night

26, Sat. Went to Hoppee's to Meet the committee on damages for road[23] Caught a beaver 36 No[.] out. 24 paid 25 cts[24]

27, Sun. Snow storm

28, Mon. Spent the day with Monroe paid him a V [$5]. Smith breaking Stalks

29, Tues. Breaking stalks & Weeds on Milts Snowstorm. Paid A Crites a visit at night. Thunderstorm The most vivid and blinding lightining That I ever saw.

---

[17] The apportionment from the county school fund. *Fairbury Gazette*, Jan. 15, 1876.

[18] This unidentified publication was possibly a news sheet published by the lyceum group or the Mount Vernon Grange.

[19] *Mary Noble* v. *William A. Noble*, her father, the charge being incest. "Justice Lange held the prisoner on $500 bail to appear for trial at the next term of the District Court." Found not guilty. *Fairbury Gazette*, Feb. 12, 1876.

[20] The *Indianapolis Sun*, a weekly, 1873–79, which supported the Independent and Greenback parties, claimed a circulation of 19,000 in 1876. Solon J. Buck, *The Granger Movement* (Cambridge, Mass., 1913), 324.

[21] The reference is to the SW¼ of sec. 4, T. 1, R. 3, homesteaded by Samuel M. Goldsberry and adjoining the property of Hawkes and Smith. According to Frank G. Wells (personal interview, July 29, 1946), some of Hawkes' cattle had been hit by a locomotive of the St. Joseph and Denver City Railroad. "All of them that could still walk he traded to Goldsberry for his farm." This story is not confirmed by the diary. However, it is apparent that Hawkes originally "traded" something for the property. On Apr. 30 when he tried unsuccessfully to get the deed, he recorded tersely, "dubious." A letter from the Jefferson County Clerk-Register of Deeds, dated Oct. 4, 1946, states that ("Milt") Goldsberry deeded the property by warranty deed to John J. Dunbar and his wife for a consideration of $2,000 on Nov. 24, 1875. We also know that the deed to the property which Hawkes finally received on May 27, 1877 was from Dunbar. Dunbar's reason for selling the property so soon may well have been the incident in which his brother became involved. See *Dunbar* in the Biographical Directory on page 28 below. The property became the site of the home in which Hawkes spent his last years and is now occupied by Charles Kelly.

[22] A lay is the plowshare of a moldboard plow. See also the entry for Sept. 3, 1877. The two common types of plow at the time were the prairie breaker and the stirring plow.

[23] "Commissioners Proceedings, February 7, 1876 . . . . Petitions of H. and F. Hoppe for damages laid over for further consideration and S. Barstow, H. O. Showalter and Ed Hawkes appointed to assess damages, if any." *Fairbury Gazette*, Feb. 12, 1876. See also the diary entry for Mar. 4, 1876.

[24] The number in attendance at the "Ball" on Friday.

March 1876

1, Wed. Cutting Wood ¾ cord cottonwood appointed Editor for Next week[25]

2, Thurs. Breaking down Sunflowers on Milts

3, Fri. Breaking cornstalks on Milt['s] hauling rails in the afternoon D. C. J. got 5 sacks corn

4, Sat. Breaking stalks before breakfast Went to Hoppee[']s to meet Committee on damages Failed Went to fairbury Billiards 50, apples 10 loaned Mrs Smith 1.00 Paid J.G.H. 4 [for?] aid 4$ Recd From Beach 15 cts change

5, Sun. Rain in the afternoon Hail and Snow at Night

6, Mon. Cleaned out the Sheds Snowstorm all day Editing a paper

7, Tues. Cleaning out the sheds Paid Monroe a visit Beat Crites at Euchre

8, Wed. Hunting Paid Jule a visit instead of going to the Lyceum

9, Thurs. Staid at home till Noon, then grubbed up 2 cottonwood stumps on Milts place. D.C. Jenkins and Wm. Brawner traded. Uncle Bill gets 10 dollars per month to feed the cattle till grass comes

10, Fri. grubbing up ash and cottonwood tree on Milts

11, Sat. Finished grubbing in the field south of railroad

12, Sun. J.G.H. and Julius paid us a visit

13, Mon. Staid at home with Rheumatism in Shoulder

14, Tues. Rheumatism D C Jenkins got one load of corn and took the horse Tom away. Thawing, creek up.

15, Wed. Rain Snow Friezing River raising Editing Rock Creek Review

16, Thurs. Stormy, paid Jule a visit. Jule & J G H Spent the night with us

17, Fri. Loafing round the house with Julius Heifer had a calf

18, Sat. Went to Fairbury [Received] 4.30 for furs [Paid for] Tobacco Collar 1.75 curry comb 15 Mrs. Smith paid 1.00 that She Borrowed 2 weeks ago D.C.J. 1 load corn 6½ [bu.?] Millet Snowstorm tonight

19, Sun. Jule Staid with us last night. Cling paid us a visit[,] also Adam Crites Euchre till 4 oclock Snowstorm all night half past five P.M. Still Snowing and drifting

20, Mon. Stormy loafing Jule and J G H paid us a visit and Staid all night

21, Tues. Went home with Jule and borrowed his hoe

22, Wed. Cutting cornstalks J.G.H. and Jamieson spent the night with us, at Euchre

23, Thurs. Cutting Corn Stalks Paid J.G.H. 50 dollars Making $90.00 for teaching School Duncan Campbell staid with us and played Euchre

24, Fri. Assessed 480. 430. 88. Total [$]998.00 Paid Monroe McCanles $3.00 for wood. making 13.00 dollars for wood this winter

25, Sat. Staid at home. Sick Jamieson, Cling & Crites playd Euchre till midnight took a trotting match

26, Sun. Trotted

27, Mon. Sick, Snowing like L Winter Rain all night River up in the timber Yesterday, Snowing and drifting all day

28, Tues. Cleared off. Sick J.J. [and] C. C. paid a visit at night

29, Wed. Clear and bright D.C.J. come down for a Small load of corn

30, Thurs. Paid Jule a visit Went duck hunting with Jamieson

31, Fri. Staid at home Sick

April 1876

1, Sat. Snow Storm Sent to Fairbury $2.00 for 1 Box of Pills and 1 Bottle of McLeans Strengthening Cordial. By Monroe No change come back[26] Jule and Jamieson played Euchre till midnight Took 4 pills near midnight

2, Sun. Sick 9, 11, and 2 oclock Snowstorm all day yesterday till midnight and today till 11. oclock

3, Mon. Sick. School meeting Spencer Parkhurst elected Moderator. 2 yrs O. Kelly. Treasurer. 3 yrs Bright

4, Tues. Sick Our creek booming. river full banks

5, Wed. Passenger and a freight train got up today the first one up since Saturday March 25. paid Monroe a visit. Rheumatism in shoulder

[25] Editor for the *Rock Creek Review*. See the entries of Mar. 6 and 15. I have been unable to find issues of this "paper" or any record of its publication.

[26] Apparently Monroe returned the change later for this comment was marked through.

6, Thurs. Went to fairbury to hear Church Howe. dissapointed.[27]

7, Fri. The River made its mark at noon. About 1 acre of Rye under water

8, Sat. Raking cornstalks ½ a day

9, Sun. Burning cornstalks Jule paid us a visit

10, Mon. Raking cornstalks for Smith ¾ [day] Ditching to let water off the cornstalks ¼ [day]

11, Tues. Thunderstorm last night, Considerable wet Oiled the harness, ½ [day] Raking up cornstalks ½ [day]

12, Wed. Paid Cling a visit tried to hire him for 6 weeks. Milt came over for corn hitched doll up for plow with cap. Smith used her ½ day

13, Thurs. Snowstorm last night 10 A.M. Snowing yet

14, Fri. Hired clingman till the first of June next for 27.00 dollars[,] 18 per mo Cling plowing in Wheat for Smith. with his team. Smith at work with my team Burning cornstalks for Smith

15, Sat. Cling plowing in Wheat for Smith with his team Smith at work with mine Finished burning stalks Cling worked for Smith this week 2 days. My team at work for him 2 days

16, Sun. Staid at home. Sick with Rheumatism. Tried hot hops. got easy

17, Mon. Sick with Rheumatism Cling plowing in Smiths wheat. 1 day.

18, Tues. Smith Commenced sowing my wheat, in the afternoon Cling at plow for Smith ¾ of a day Middleton started home Smith went to Steele City with him and got home at 10 A.M.

19, Wed. Cling plowing in my wheat 1 day. Smith plowing and Sowing Very windy. Had a good wash, and made some hop tea.

20, Thurs. Went to Fairbury with Corn[.] 27 bushels 20 lbs. 25 cents per bushel [$] 6.80. Paid Cling five dollars Paid Mrs. Smith two dollars that I borrowed 2 weeks ago Whiskey 40 Cigars 20 8 checks. Flask 80 Cling plow ½[,] Smith 1 day

21, Fri. D. C. Jenkins got 26 bushels of Oats Memoranda Cling and Smith plowing in my wheat

22, Sat. Cling and Smith plowing in my wheat. Rain towards night Flood in the creeks.

23, Sun. Sick, 9 P.M. took 3 pills. McLeans

24, Mon. Finished the stalk ground Smith sowed 37 bushels on 17½ acres. And 5 bushels on the onion patch

25, Tues. Cling at plough till noon dragging in wheat on Sod afternoon

26, Wed. Smith finished sowing the Sod 14 bushels on it, making in al[l] 56 bushels for seed. Cling finished draging in my wheat. Cling sick

27, Thurs. Cling went home this morning—I went to plow and finished plowing for oats Cling has worked 11 days

28, Fri. D. C. Jenkins got 10 bu. of oats and 3½ bu of Millet Making 10 bu of Millet or all we traded for and 36 bu of Oats besides what I fed to the Calves A. Crites harrowing in Smiths wheat. for me 1 day John G. James arrived from Kansas

29, Sat. Smith sowing oats. Finished the oats by sundown. Crites worked one day for me. makes two days this week Jenkins took away the Cattle. I bought lily for 25.00 due to him 8.34 A Crites 1 plug tobacco 22½[¢]

30, Sun. Smith went to get the deed but failed. DUBIOUS Clingman McCanless backed out from his bargain. NO ACCOUNT[28]

May 1876

1, Mon. Went to Fairbury Whiskey 1.20 Pool .80

2, Tues. Hired Ben Campbell till the first of June for 16.00 commence tomorrow morning Crites worked 1 day plowing for Oats for Smith & me

3. Wed. Ben dragging in oats for Smith I was raking weeds on Milts and burning

4, Thurs. Rain

5, Fri. Smith and Ben at plow on Milts for corn I was burning trash

6, Sat. Rain A Crites 1 plug Tobacco 22½[¢]

7, Sun. Staid at home J. G. James paid us a visit.

8, Mon. Went to Fairbury with J. G. James. pt. Rum gum guaiac[29] 1.00 Fish hooks &

[27] Howe was prevented from meeting his Fairbury engagement "owing to the late heavy storms and bad condition of the roads . . . a sore disappointment to numerous patrons." *Fairbury Gazette*, Apr. 8, 1876.

[28] The reference is to Clingman McCanless's agreement to work. See the entry for Apr. 14.

[29] Probably a solution of gum guaiac in rum. "Formerly guaiac was included in that mysterious group of drugs known as alteratives which were used in all sorts of diseases for which there was no satisfactory treat-

lines .35 Dinner .50 Drinks 30 Smith Raking weeds ½ day Ben at plow

9, Tues. Smith and Ben at plow on Milts 1 day each

10, Wed. Smith and Ben at plow on Milts 1 day each Smith took J. G. James across the river in the wagon caught 1 cat fish

11, Thurs. Smith and Ben at plow on Milts Caught 2 fish

12, Fri. Smith and Ben at plow on Milts

13, Sat. Smith and Ben finished plowing on Milts place at noon Both at drag in the afternoon

14, Sun. Fishing

15, Mon. Ben and Smith at harrow till 3 oclock Ben Started at plow for Smith. I commenced marking out for corn

16, Tues. Smith finished marking out one way on Milts. Ben at plow for Smith

17, Wed. Went to Court at Fairbury got Judgment against the St Joe and D C R R. Co for six hundred dollars[30]

18, Thurs. Went to Court. done nothing

19, Fri. Went to Court Smith got Judgment against the St Joe and D.C.R.R. for 290.00

20, Sat. Came home from Court costs 15.00

21, Sun.

22, Mon. Smith and Crites commenced planting Corn on Milts in the afternoon. ½ day each

23, Tues. Smith and Crites planting corn 1 day each

24, Wed. Smith planting corn in forenoon ½ day I commenced to roll Broke down planted corn with Mrs Smith in the afternoon Smith fixed the roll 1½ days

25, Thurs. Smith planting corn Myself at Roll.

26, Fri. Smith and Ben finished planting corn on Milts at noon. I finished Rolling ½ day each. 7 day[s to] plant 26 acres. Smith commenced marking out on his own

27, Sat. I went to Fairbury to get the deed for S.W. ¼ of [section] 4. [Township] 1. [Range] 3. paid for recording 75[¢] Beer & whiskey 1.25 Borrowed of Mrs. Smith 2.00

28, Sun. Staid at home

29, Mon. Rolling my wheat

30, Tues. Rolling my wheat

31, Wed. Hauled 2 loads of corn to town 24 cts 60 bu 14.30

June 1876

1, Thurs. Hauled 1 load of corn to town 6.75. Paid Ben Campbell 16.00

2, Fri. Laid around the Stove

3, Sat. Rolling Smiths wheat

4, Sun. Staid at home expecting cap down Found ripe Strawberries

5, Mon. Commenced plowing Corn on Milts

6, Tues. Plowing corn Smith plowing for Millet

7, Wed. Plowing corn on Milt[s] caught in a Shower

8, Thurs. Plowing corn on Milt[s] A good rain last night, well in the ground. Smith sow'd the millet. a general Turn out at Roode's

9, Fri. Plowing corn got through it one way

10, Sat. Heavy rain this morning Too wet to plow Went up the creek to get my traps. they were gone. Ed. Crites says that West McCord has got a lot in the celler. Jule brought my mail

11, Sun. Picked Strawberries for dinner. Hunted the bluffs in the afternoon Spent the night with Monroe. Heavy rain towards night

12, Mon. Heavy rain last night. Little Blue

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ment such as scrofula, syphilis, chronic rheumatism, et cetera . . . . it is doubtful whether it has any therapeutic value beyond that of other nauseants." *The Dispensatory of the United States* . . . (ed. 23, Philadelphia, 1943), 506–508.

[30] On Mar. 8, 1873 Hawkes and William Smith had filed separate petitions (see also the entry for May 19) for damages against the St. Joseph and Denver City Railroad Company. Hawkes' petition was for $600 and Smith's for $290. The essence of the case is stated in one sentence of 445 words and full of frontier legalistic foofaraw from which the following is taken: ". . . on the 19th day of March 1872 and while the said locomotive was in the use & service of the said defendant upon said railroad and upon that portion of said railroad running near by the land of the plaintiff by reason of said unsafeness defectiveness and insecurity & neglect to close the said ashpan or fire grate thereof the sparks of fire escaped from said smokestack or chimney & from said ashpan or fire grate upon said locomotive the same not being then & there closed covered & protected as it was the duty of the said defendant to have done and the said sparks of fire so escaping as aforesaid fell upon the grass & weeds of the land adjoining the plaintiffs said lands and set the same on fire and the said fire so set spread over the plaintiffs land and burned his said grass and his trees and thirty rods of his said fence to his damage Six Hundred Dollars. . . ."

up thinned out 10 rows of corn on the E[ast] side

13, Tues. Went to fairbury to see the doctor Medicine 1.00 Show 50 Whiskey 60 Borrowed of Mrs. Smith 2.00

14, Wed. Plowing corn Showery Wind north and cool

15, Thurs. Plowing corn Rain at noon Wind north and cool

16, Fri. Went to Fairbury got my hoes Sharpened Whiskey 40 Wind north and cool

17, Sat. Plowing corn ½ day went to the grange Wind north and cool

18, Sun. Staid at home Jamieson paid us a visit at night Wind north and cool

19, Mon. Plowing corn

20, Tues. got through plowing corn on Milts the second time

21, Wed. Plowing corn for Smith

22, Thurs. Plowing corn for Smith till noon J. G. James and Smith ½ day each pulling corn thinning out

23, Fri. 106 degrees in the Shade Thinning out corn Smith and J G James 1 day each

24, Sat. Hot 100° Went to fairbury with a load of corn 6.60 Loaned Jamieson 1.00 Paid Kinnamon 1.00 Billiards 50 Cigars 60 Beer 50 Whiskey 1.00

25, Sun. Hot, Staid at home

26, Mon. Hot 105 Pulled out the cockle bur from rows of corn picked mulberries greenback Speech at night M Warren.

27, Tues. Cutting Rye afternoon Ad Andrews ½ day Jamieson ½ day A. Crites 1 day Shippee 1 day for me

28, Wed. Rain ½ the night Crites, Jamieson, Andrews & Shippee ½ a day each in the afternoon for me

29, Thurs. Crites, Jamieson, Shippee and Charlie 1 day each for me

30, Fri. Crites, Jamieson, Shippee and Charlie 1 day each for Smith

July 1876

1, Sat. Showers Finished cutting Rye. Charlie, Crites, Jamieson & Shippee ½ day each for me. 1 load of corn 7.00 paid Charlie 2.00 Charlie Paid pd July 4[,] 3.75 Andrews Paid 1 day 1.50 Jamieson 3½ days 5.25 due Shippee 4 days 6.00

2, Sun. Staid at home Settled with A Crites due to him 44 cents

3, Mon. Fine Went to Fairbury with a load of corn 6.95 [Paid out] Suit 5.25 Bailey 50 Border 40 Beer 1.00

4, Tues. Fine Went to Fairbury to celebrate Paid Jamieson 2.00 Charlie McC. 1.75 Settled with C. Cigars 1.00 Beer 1.00

5, Wed. Fine Plowing corn on Milts 1 day[.] Smith single plow ½ day

6, Thurs. Fine Plowing corn on Milts 1 day Smith 1 day

7, Fri. Fine Plowing corn on Milts Found the chinch bug in the wheat. it's gone up[31]

8, Sat. Plowing corn for Smith 10 acres A Soaker tonight

9, Sun. 104 Paid Crites a visit talked chinch bug Saw Liz. G. Paid Ad Andrews 1.50 for Binding Rye Settled

10, Mon. 102 Plowing corn for Smith

11, Tues. 100 Finished Smiths corn at noon Plowing corn on Milts in the afternoon Smith thinning out

12, Wed. Fine 104 Hot Plowing corn on Milts Smith thinning out till noon

13, Thurs. Plowing corn on Milts till 10 oclock Rain. Plowing corn in the afternoon and Quit QUIT plowing corn

14, Fri. Hot Staid at home and took the corn plow apart, and put away

15, Sat. Cloudy Went to Fairbury Pool 1.30 Whiskey 20 Cigars 30 Plow 40 Shave 15 Borrowed of Mrs. Smith 1.00 making 5.50 due to her Jamieson 1 day Stacking Rye for me.

16, Sun. Staid at home J.G.H. & Jule paid us a visit

17, Mon. Thinning corn Jamieson and Smith Stacking Rye 1 day each for me Rain

18, Tues. Commenced to plow 1 day

19, Wed. plow 1 day Stacking Rye 1 day for Jamieson & Smith Smith's Rye

20, Thurs. Stacking Rye for me ½ a day each for Jamieson & Smith[.] Jamieson & Crites Binding wheat for Smith ½ a day each

21, Fri. Went to Fairbury with a load of corn. 6.90 Shoes 2.25 Whangs 50 Shippee 1.00 Treats 1.00 Billiards 25 Beer 40 cr 50 Smith bought a Marsh Harvester for 185.00 [$]10 down Jan 1, '77, 25.00 Dec 1, '77 [$]50 Dec 1, '78 [$]50 Dec 1 '79, [$]50. 4 payments

[31] It always does when the bugs come.

22, Sat. Tried the Sulky plow 110°. A Crites, Jamieson[,] Shippee 1 day each Cutting wheat for Smith

23, Sun. 72° Cool. Cloudy Hauled the Machine to My wheat. Rain ½ a day

24, Mon. Cloudy cool Cutting my wheat Jamieson, & Shippee 1 day each. Binding Shock'd 158 Shocks

25, Tues. Smith cutting Jamiesons Wheat Plowing

26, Wed. Plowing

27, Thurs. Shocking. cutting my wheat Jamieson and Shippee 1 day each

28, Fri. Shocking, Jamieson & Shippee 1 day each Binding for me Sent to Fairbury for one gallon of whiskey by J. G. James

29, Sat. Hot. 106° Shocking. Jamieson & Shippee 1 day each Binding for me

30, Sun. Cutting my wheat Smith, James, & Shippee ¼ of a day each

31, Mon. Shippee, Jamieson Binding for Smith 1 day each went to Fairbury Beer 50 cigars 10

August 1876

1, Tues. Finished Smiths china tea [wheat].[32] Jamieson, Shippee ¼ day each for Smith. And ¾ day each in my oats

2, Wed. Cutting my oats Finished at noon Shippee & Jamieson ½ day each for me. Cutting Jamiesons wheat in the afternoon Jamieson cut his leg Shippee laid it off[33]

3, Thurs. Smith finished Jamiesons wheat by sundown Rheumatism in hands Shippee laid it off Cattle been in the corn

4, Fri. Driving the Marsh harvester. Cutting Smith cherick wheat[34] 1 day Smith and Shippee Binding 1 day each

5, Sat. Driving the Marsh harvester[.] Smith and Shippee Binding ½ a day each Thunder Shower

6, Sun.

7, Mon. Settled with Shippee due to him 24.00 Hired Ben Campbell for 1 month at 1800 eighteen dollars per month Plowing Cutting Smith oats

8, Tues. Smith finished cutting his Oats. Went to town with a load of corn 18⅔ bus 25 cts 4.65 paid out for Whiskey to Peter Tondre 3.00 Ammunition .60 Take something 1.25 Paper 50 etcetra 45 [total] 5.80

9, Wed. Fixing the mower Smith cut the Millet in the afternoon Plowing ½ a day

10, Thurs. Plowing finished the Rye patch. commenced on the wheat Stubble Smith & Ben commenced to stack hauled one load Showery, Plow ½ a day Took up McCords cattle

11, Fri. Plowing. let McCord have his cattle McCord pays me 5.00 when I get his cattle again in Mis-chief

12, Sat. Plow ½ a day Heard Jule was sick Raked up the Millet ½ a day

13, Sun. Paid Jule a visit found him getting better

14, Mon. Plowing 2 teams on Wheat Stubble

15, Tues. Rain Plowing 2 teams on wheat Stubble ½ a day each

16, Wed. Plowing on Milts 2 teams on the Rye Stubble

17, Thurs. Plowing on Milts 2 teams

18, Fri. Plowing on Milts 2 teams 1 day each

19, Sat. Plowing on Milts 1 team 1 day

20, Sun. Settled with Jamieson Binding 12 days = 18.00 Stacking 3½ —3.50 [total] 21.50 due us 3.40 cutting 14.25 Shippee by work 5.25 Cash 3.00 Lard 90 Bacon 1.50 [total] 24.90

21, Mon. 1 day Ben at plow on Milts Ship-

[32] In the United States the initial planting of the variety of spring wheat known as China Tea is reputed to have been 6 or 7 kernels which a merchant at Petersburg, Rensselaer County, New York, found in a chest of black tea in 1845. Agronomists consider it identical with what is now classified as Java wheat, a variety which is probably one of the oldest spring wheats grown in the United States. Within this variety, there are minor type variations. For description, history, and synonyms, see J. Allen Clark and B. B. Bayles, *Classification of Wheat Varieties Grown in the United States* (U. S. Department of Agriculture, *Technical Bulletin 459*, Washington, 1935), 100–101. For other specific references to China Tea wheat by the diarist, see his entries for Apr. 5, 7, 11, July 20, 21, 23, 24, and Oct. 8, 1877.

[33] The wheat not the leg.

[34] The spring wheat which Hawkes called "cherick" or "Cherrick" (see also his entries for Mar. 27, Apr. 2, 7, 11, May 21, 23, 30, July 25, 26, 27, 30, 31, Aug. 1, 2, 3, and Oct. 8, 1877) has defied identification. It is not listed in Clark and Bayles, *Classification of Wheat Varieties Grown in the United States*, or other similar bulletins. It was not in the list of varieties reported in the U. S. Department of Agriculture, Division of Statistics, *Report 52* (Washington, 1888), 232–233.

pee took a load of corn to Fairbury 17 bu 60 lbs [received] $4.10 [paid] Whiskey 20 Cigars 20 Medicine 1.25 Buckles 15 Blacksmithing 45 Shave 15 [total] 2.40

22, Tues. Ben at plow on Milts Shippee took $4.50 of corn to Fairbury

23, Wed. Opening the Shocks Stacking wheat Crites 1 day Ad Andrews 1 day James team 1 day Plowing on Milts ½ day

24, Thurs. Plowing on Milts 1 day Wind North GRASSHOPPERS HEAPS

25, Fri. Plowing on Milts 1 day Paid Ben 1 dollar

26, Sat. Went to Fairbury with a load of corn for Smith Shave 15 Beer 40 Wine 20 Cigars 10 Went to the Bank. No go. Money all gone, a week ago

27, Sun. J. G. H. & Jule paid us a visit Tried to Smoke the hoppers out of the corn no go. Monroe had a visitor weigh'd lbs.[35]

28, Mon. Threshing Rye in the afternoon. A & Theodore Crites. Ad Andrews[,] Jamieson & Team ½ a day each— John G. Hollenback ½ a day

29, Tues. Threshing Rye A Crites[,] Ad Andrews, Jamieson, and team ¾ a day each Charlie McCanless ½ a day J. G. H. ¾ day Broke the Masterwheel Went to Fairbury Beer 30 Cigars 10 Whiskey 40

30, Wed. Went with Smith to town with Rye. J[enkins?] 1 load 63 B[u] [$]19.15 Beer 50 Rye ****

31, Thurs. Plow on Milts 1 day Smith and Ben Stacking Millet

September 1876

1, Fri. Plow on Milts 1 day Smith and Ben Stacking millet

2, Sat. Went to Fairbury with Smith with Rye 32 bu ¼ $9.65 Smith paid me 4.00 [Paid] Single tree 25 Kinnamons 1.00 Medicine .50

3, Sun. Staid at home with the head acke in the morning. paid Mon a visit in the afternoon

4, Mon. Went to town and paid Milts Taxes 20.96 [Received for] 1 load of corn 7.15 1 Load of Rye 9.50 [total $16.65] [Paid] Plow and singletree 1.00 dinner 25 grapes 30 Beer 40 cigar 50

5, Tues. Plowing on Milts 1 day Ben at plow on the wheat stubble today and yesterday 2 days Paid Ben Campbell 12.50 twelve dollars & fifty cents making 18 eighteen dollars for 1 month

6, Wed. Plow on Milts 1 day

7, Thurs. Plow on Milts 1 day

8, Fri. Plow on Milts 1 day Paid John G. James four dollars for his patent Sulky plow and harrow attachment 4.00 Heavy rain last night

9, Sat. Went to the caucus at Steele City, elected delegate to Fairbury at Republican convention,[36] Cigars 60 was nominated for assessor Mrs. Smith let me have 5.00 Went home with Mr. Campbell

10, Sun. Spent the day with Mr. Campbell. Malcolm brought me across the river Paid Malcolm Campbell five dollars for J. G. James for a farm right to use the patent Sulkey plow and harrow attachment

11, Mon. Plowing on Milts

12, Tues. Finished plowing on Milts

13, Wed. Went to court Smith let me have 7.00

14, Thurs. On the Jury Shoebottom vs Gardner[37]

15, Fri.

16, Sat. Came home from town after 9 oclock P.M. Paid Dooley 4.00 Hung the Jury Hurlburt vs. Graves[38]

17, Sun.

[35] The reference is probably to the birth of a child to Monroe and Martha McCanless. The space left for the number of pounds was never filled.

[36] When Hawkes died, the editor of the *Fairbury Journal*, Nov. 29, 1902, recalled: "He [Hawkes] always voted the Democratic ticket." Therein the editor erred. Hawkes was too much an individualist and perhaps too well informed to "always" vote in any one way. He was a delegate to the county convention of the Republicans in 1876. See the entry for Sept. 9, 1876. The next year he attended meetings of the Greenback Party. See the entries for Sept. 22 and 29, 1877. It is probably safe to surmise that on at least one occasion in later years he backed the Populists, turning or returning to the Democratic fold in his last years.

[37] Isaac S. Gardner was charged by Henry S. Shoebotham with false accusations concerning the supposed theft of wheat by the latter who sought $2,000 damages. The court found in favor of Gardner. Jefferson County Court Records.

[38] Martha Hulburt sough to collect from William N. Graves on a promissory note and eventually received a judgment for $73.37. *Ibid.*

18, Mon. Mrs. Smith let me have 3.25 On the Jury that tried Pheonix vs Crane[39]

19, Tues. Discharged from Court sold my account to C. C. Boyles for 9.45[40] Mittens 1.40 Coat 85 vest 1.00 Shirts 2.00 Tea .50 Kindler 25 Total 6.00 Beer 1.00

20, Wed. Went to Fairbury with Corn [received] 6.25 pd Merrill for Wheat 3.00 Cheese 90 Saloon 40 25 40 [total] 5.00

21, Thurs. Pd Ad Andrews 2.50 due to him 50. Shippee Sow'd 22 bu Rye I put in 3 bu wheat and Harrowed it in

22, Fri. Harrowing in Rye

23, Sat. Harrowing in Rye Smith stacking Hay Theodore helping 1 day

24, Sun. Paid Monroe a visit

25, Mon. Plow ½ a day Raking hay ½ a day Smith cutting for me ½ day

26, Tues. Plow till 10 A. M. Raking and bunching Hay Smith cutting for me 1 day Let Adam Crites have 20 Bushels of Rye [at] 32½ cents $6.50

27, Wed. Stacking hay 4 loads for Smith and 7 Seven loads for myself Work till Midnight Shippee with us

28, Thurs. Thunderstorm last night Plowing 1 day

29, Fri. Hauled 7 loads of hay making 14 loads I think that is enough

30, Sat. Plowing 1 day

October 1876

1, Sun.

2, Mon. Sowing Rye, 22 bus Making 44 bu Rye and 3 bu winter wheat on Milts north of the R R

3, Tues. Harrowing in Rye

4, Wed. Rolling Rye rainy

5, Thurs. Harrowing in rye finished on Milts

6, Fri. Went to the Fair J. H. Shippee & Mollie Cook married

7, Sat. ditto [Went to the Fair]

8, Sun. Recieved of J. H. Shippee an order on Thomas McCord for threshing for 20.49

9, Mon. Plow

10, Tues. Plowing till noon Sowing Ry[e] in the afternoon

11, Wed. Sowing Rye in the forenoon Harrow in Rye in the afternoon

12, Thurs. Harrowing in Rye

13, Fri. Harrowing in Rye

14, Sat. Bought of Jamieson 122 lbs of beef at 7 cents $8.54. due to him 8.54 Harrowing in Rye

15, Sun. Finished sowing Rye Sown 42 bushels at home and 44 on Milts making in all sown 86 bushels Sold A Crites a pump for 10.00

16, Mon. Went to Fairbury in the afternoone Finished dragging Rye in the forenoon 10 bushels at 31. [Received] 3.10 paid Mrs. Smith 1.00 Plow handle 1.00 Saloon. etc. 1.20

17, Tues. Fixing granary Commenced thrashing for Smith in afternoon A & Theo Crites, Jamieson[,] Charlie, Cling, Monroe, Milt, Smith ½ a day each

18, Wed. Settled with Ad Andrews paid him 50 cts. Thrashing for Smith till 3 oclock Wheat 235 bushels Oats 108 bus $15.00

19, Thurs. finished threshing Jamieson, Monroe[,] Charlie, Milt, Adam [and] Theo Crites[,] Shippee 2½ days each Cling 2 days Threshing wheat 211 bu Oats 130 bu Hawkes $14.45 Smith 14.99 Paid threshers 28.44 due Joe McCord 1.00 Mrs. Smith lent 2.00 due on Rye threshing 11.85 due to Shippee on order 20.49 Borrow of Mollie 5.00 [total] due Shippee 37.34

20, Fri. Rain all night last night and Showery today, loafing Shippee bought the Millet Stack for 10 dollars or ten days work a[t] 1.00 a day after it freezes up at picking corn.

21, Sat. Went to Fairbury with 26 [lbs.] 22 bu of wheat, Smith full sold to Champlain 22 [bu.], 20 [lbs.] at 73[¢] 16.30 Bot Boot[s] 3.90 40 Singletree 40 whiskey 50 apples 25 Cr. Jo McCord 1.70 [total] 7.15 Shave 15 [total] 7.30 Settled the threshing bill

22, Sun. Picked one load of corn with and for Smith Paid Mon. a visit

[39] *Morgan Crane* v. *Franklin K. Phoenix* relative to $40 worth of labor in connection with the sale and delivery of nursery stock. Apparently the case was continued and later, May 27, 1877, tried before Judge A. J. Weaver who dismissed the case. *Ibid.*

[40] Apparently Hawkes needed cash. His account, as allowed by the commissioners on Oct. 2 and reported in the *Fairbury Gazette* (Oct. 7, 1876) was: ". . . jurors fees, September term 1876 . . . Ed. Hawkes . . . $12.60." Boyle's charge was 25 percent.

23, Mon. Thrashing Jamiesons wheat in the fore noon, 87 Bushels. One third 29 bushels to town in the afternoon Paid threshers 1.45 Had to store the grain Bum with Jule 2.00

24, Tues.

25, Wed. Went to Fairbury & sold our wheat 77 bu 40 lbs at 65 cts Total 50.50 Sick abed Teu 24 Spring 25 Papers 30 Powder 1.00 Cigars 10 Plow sharpened and Handle rivited Theodore Crites 1 day thrashing for Jule in my place

26, Thurs. Helped Shippee load some Millet. Commenced plowing the oat stubble with Smiths team

27, Fri. Went to Fairbury with 29 bu of Wheat at 72 cts Recieved 20.40 Paid for plow .35 C & A Crites drink 30 Cigar and whiskey 30 Took up a note at the Bank of J. H. Shippee 31.80 Theo Crites thrashing ½ a day at Monroes for me

28, Sat. Settled with Jamieson Paid him 43.30 Plowing 1 day

29, Sun. Paid Monroe a visit Martha very sick Settled with Crites due me $3.25

30, Mon. Plowing 1 day on oat ground

31, Tues. Due at the Bank at Fairbury on Shippee's Note 31.80 Plowing 1 day on Oat ground. Settled with Monroe for threshing due to him 50 cents due to Charlie 2.00

November 1876

1, Wed. Rain last night Snowing at 9 A.M. Still snowing at Noon also at night.

2, Thurs. Hunting in the forenoon No luck Finished plowing the oat land. commenced on the hedge row

3, Fri. Hard frost last night Made a crossing at the creek. Cleaned up 33 bushels of wheat

4, Sat. Went to Fairbury with Wheat 30 [bu]. 40 [lbs.] $22.80 Loaned Mrs. Smith 2.50 Kinnamon 1.00 Medicine .50 Supper 25 Cigars 40 Wine 40 Apples 10 [total] 5.15

5, Sun. Spent the day with Jule

6, Mon. Pleasant Fairbury with Jule New Hat 2.00 Shave Haircut .40 Drinks 1.00 Cigars 40

7, Tues. Pleasant Election at Steele City Cigars 1.00

8, Wed. Fairbury 1.50 Pleasant

9, Thurs. Pleasant Settled with Shippee Paid him on Note 31.80 Cash 10.00 due to him 15.55 due to Cling for him 9.00 [total] $66.35 [less] 41.80 24.55 Plowing for Smith 1 day****

10, Fri. Plowing for Smith 1 day Pleasant

11, Sat. Plowing for Smith in the forenoon grange in the afternoon Pleasant Set a trap for a beaver

12, Sun. Paid Monroe a visit Cloudy. Cold North wind

13, Mon. Snowing cold Cut two loads of firewood 20°

14, Tues. Cut 1 load of firewood in the forenoon. picked 1 load of corn in the afternoon for Smith

15, Wed. Commenced picking corn on Milts. Smith & Team and myself picked 2 loads

16, Thurs. Picked 2 loads of corn

17, Fri. Picked 2 loads of corn

18, Sat. Picked 1 load of corn Set 3 Beaver Traps

19, Sun. Caught 2 Beaver

20, Mon. Went to Fairbury with wheat 30 [bu.] 50 [lbs.] 75 cts 23.10 30 [bu]. 50 [lbs.] at 75 cts 23.10 61 bu & 40 lbs = 46.20 Paid Cling 2.00 due them on threshing and 9.00 on Shippee's account

21, Tues. Went to Fairbury with 30 B[u] 30 lbs at 77¢ $23.45 Paid off a note at the Bank 53.00 [$]11 [$]53 Theatre 1.50 Supper .50 Cigars 50 whiskey 1.00 [total] 67.50

22, Wed. Pick'd 2 loads of corn Caught 1 Beaver Mr. Jenkins hauled 2 loads of Wood 8 more to get

23, Thurs. Pick'd 2 loads of corn Scared up a deer near the Black Walnut

24, Fri. Pick'd 2 loads of corn

25, Sat. Pick'd 1 load of corn Reset 5 Beaver traps Went to the Grange paid for Mrs Smith 60[¢] myself 90[¢] Jenkins 1 load 7 more

26, Sun. Caught nothing

27, Mon. Pick'd 2 loads of corn caught 1 toe. 1 forefoot.

28, Tues. Pickd 2 loads of corn Snowing at sundown

29, Wed. Tracked up a buck & doe got a shot and wounded the doe, left her track at the water holes, at sundown.

30, Thurs. Went to the waterholes with Smith, tracked the doe to Indian Creek and back to Slocums corn field, left her track going south on the run at sundown.

December 1876

1, Fri. Zero Zero Due at the bank of Thomas Harbine fifty three (53) dollars Paid Nov. 21 getting out wood at the drift attended Lyceum at the Rock Creek school

2, Sat. Caught a Wild cat work at the drift Shippee & Mollie Staid overnight with us

3, Sun. Dressed a Wild Cat Paid Monroe a visit

4, Mon. Picked 2 loads of corn Fine

5, Tues. Shippee & Bill picking corn with us today Picked 5 loads 26 rows Organized a Lyceum at Lower Rock Creek School House. Fine

6, Wed. Pick'd 5 loads 27 rows Mr. & Mrs. Crites paid us a visit this evening

7, Thurs. Pick'd 5 loads 25 rows

8, Fri. Cold & windy Shippee went home has worked out 6 days due 4 more

9, Sat. Pick 2 bushel of corn too cold came home and went chopping wood

10, Sun. Fine paid Mon a visit

11, Mon. Pick 3 loads Shippee 1 load Smith 2 loads Shippee 1 day Making 7

12, Tues. Pick 8 loads 34 rows Milt 1 day Shippee 9 days Shippee 2 days making 9

13, Wed. Picked 6 loads Settled with Shippee at noon Shippee worked for Milt in the afternoon Milt has worked out 3 days 7 more to work 21 rows more to pick on Milts[.] left for fence 16 days work due Smith

14, Thurs. Pickd 4 rows for Smith too cold[.] Euchre

15, Fri. Pickd 6 loads of corn for Smith. Milt put in 4 days 3 more due

16, Sat. Zero Smith Picked 1 load of corn Paid J. H. Shippee on acct $5.00 due him 9.70 Charity Crites 85, 10, 55 Too cold to work Smith went to town with 1 load of corn cigars 50

17, Sun. Zero Cut 3 loads of wood in the drift. Smith hauld it home

18, Mon. 14° Pick 2 loads Smith

19, Tues. Pick 2 loads Smith [Lyceum] Compulsory Education Aff[irmative] organized Dancing club.

20, Wed. Fine Smith Pickd 2 loads of corn

21, Thurs. Fine Smith Picked 2 loads of corn Club dance 10 members 1.00 10.00 paid Monroe 2.50 Circle round the Moon sign of a storm

22, Fri. Cloudy Signs of Snow Went to Fairbury with 30 bu wheat for Smith at 90 cts $27.00[.] paid a note on Marsh Harvester 25.00 Borrowed of Smith 3.00 whiskey 20 Pencils 25 Nails 25 Paper 25 Cigars 55 Diary 35 [total] 1.85 Club 2.85

23, Sat. Cold[.] cutting wood across the river Smith sawing

24, Sun. 10° Snowing

25, Mon. 16° Still snowing 3 in. deep Hunting went to Indian Creek, and the water holes, saw four deer Francis Wells was with me We took dinner with Slocum.

26, Tues. Hunting started five deer from the mouth of Coal creek. got 4 long Shots. track'd 2 back to the blue. Froze my left foot. Ben and Joe Campbell was along Lyceum

27, Wed. Hunting Shot one doe near Wolfs old garden Hunted all day with Ben and Donald Campbell.

28, Thurs. Hunting Track d 4 deer across the blue got a shot about Sundown, at a doe & fawn. Club dance Reciepts 3.23 paid 2.50

29, Fri. Staid at home and wrote a letter to Coon sent his reciept for Taxes 20.49 interest 75 cts 21.24

30, Sat. Went to fairbury with wheat 13 bu 93 cts 11.62 Bought 1 lamp 75 cigars 50 Drinks 40 Buckshot 25 12 bushels for Smith 11.62½ paid Mrs. Smith 10.

31, Sun. Staid at home and read the News, paid Monroe a visit in the evening

January 1877

1, Mon. Went to Fairbury with 14 bus of wheat at 93 cts $13.25 paid out for Whiskey 1.20 cigars 70 Nuts 40 Box 1.00 The wheat was Smiths paid Blacksmith 4.00 Mrs. Smith 7.00 Borrowed 2.25

2, Tues. Hunting in the canons

3, Wed. Cutting wood across the river

4, Thurs. Cutting wood across the river Club dance Re[ceipts] 2.25, pd 2.50

5, Fri. Cutting wood ½ day Installed the Officers of pleasant Valley Grange No. 565

6, Sat. Went to Fairbury Lumber 5.75 Nails 45 cts Pool &c &c 4.00 went home with John & Henry Baker

7, Sun. Went to Andrew Bakers with John Snowstorm cold

8, Mon. Left Andrew Bakers at 10 A.M.

staid in fairbury till 4 P. M. rode home with A. R. Roode.

9, Tues. Hunting. no go Pulled up the floor of Milts old house Went to the Lyceum Essay. Poor, Miserable, Trapper

10, Wed. Put a floor in Milts old house for the dancing club

11, Thurs. Fixed benches, Window papered the walls of Milts old house Milt, Bill & Shippee Staid with us last night

12, Fri. Staid at home Cold wrote a letter to Aunt Allender due Shippee 9.70 Paid Shippee 10.00 due me 30 cents change Borrowed 5.00 of Mrs. Smith Milt, Bill, & Shippee staid with us last night

13, Sat. Paid Shippee 1.00 for his account against Milt of 4.00 Went to Fairbury to the Lyceum, no go. Revival Pool .70, Borrowed 50 cts of Mrs. Smith. Stamps 20. Sent J P Mendum 5.00 in a registered letter

14, Sun. Shot at a buck near John Mitchams

15, Mon. Fearfull Snowstorm

16, Tues. Loafing Discussed Free Trade vs Protective Tariff verdict for F. T.

17, Wed. Sleighing wood across the blue

18, Thurs. Cutting wood

19, Fri. Cutting and Hauling wood across the river

20, Sat. Cut 3 ash trees near Rose Creek forenoon Went to Fairbury Borrowed of Mrs. Smith $2.00 Pool 1.20 glass 15 cigars 10 Letter 10 Apples 5 [total] 1.60 Ben came home with Liz I Staid to church

21, Sun. Took Ben home, Monroe & Mrs. Smith went to hear J. Saxon preach in Harbines hall whiskey 20 cigars 10

22, Mon. Cutting and hauling out the ash

23, Tues. Cutting up the ash Cut up a load of dry wood for Lyceum and Club.

24, Wed. Chopping

25, Thurs. Chopping oak Club dance 13 Members Reciepts 3.00 paid out 2.50

26, Fri. thawing Chopping oak

27, Sat. very fine Chopping in the pasture Butchered 2 hogs went to Fairbury for mail at night Caught 2 prairie hens took them to Lettons 12 games of pool 0000 nix 12 games 0

28, Sun. very fine dogd the calves off the Rye Paid Monroe a visit

29, Mon. Warm, Murky, foggy Picking Corn 2 loads for Smith thawing out Creek up

30, Tues. Misty Thawing out all night Cutting up an Oak log into firewood river raising Lyceum fizzled

31, Wed. Cutting up an oak log into fire wood

February 1877

1, Thurs. Cutting up another oak log into firewood Club dance only four ladies lots of Boys stag dance till 12 P.M.

2, Fri. Cutting up oak fire wood

3, Sat. Fairbury 11 [bu]. 40 [lbs.] wheat 11.65 [Paid] flour 3.00 Whiskey 90 Tobacco 40 Cigars 70 file 20 Signaloil[?] 25 Dry fruit 1.00 papers 20 6.65

4, Sun. Ice going out of the river horses on the rye

5, Mon. Picking corn 3 loads for Smith 1 day Took up 7 head of cattle charged W. Crites 2.00 for damage to be worked out in the spring Jamieson at plow × [across] blue for hansell very fine

6, Tues. very fine picked 3 loads of corn for Smith 1 day

7, Wed. Picking corn for Smith 2 loads ½ a day rain in afternoon

8, Thurs. picking corn for Smith 3 loads No dance, 2 set

9, Fri. picking corn for Smith 4 loads[.] Jamieson 1 day

10, Sat. picking corn for Smith 4 loads[.] Jamieson 1 day

11, Sun. Staid at home and read the news, cold Slight Snow Theodore brought my mail

12, Mon. pick 4 loads of corn finished Smiths

13, Tues. picked 2 loads of corn on Milts[.] Smith 1 day

14, Wed. picked 2 loads of corn on Milts Finished Corn picking

15, Thurs. Fixing corn crib Shippee Brought my Mail, papers from Julius McCanless

16, Fri. Locating a road or Viewing a road by Lamberts Shippee helped Smith cover my corn crib

17, Sat. Finished viewing Road Went to Fairbury Pool 5.00 Hoes 2.00 1 for Smith 1.00 1 for myself 1.00

18, Sun. Put hoe on handle

19, Mon. Set some traps Commenced cutting corn Stalks ½ a day

20, Tues. Cutting corn Stalks 1 day

21, Wed. Cutting Stalks ½ a day Caught 1 Beaver [and] 1 mink

22, Thurs. Rain all day Stretched the Beaver no dance

23, Fri. McCanless's cattle on the rye, had a fuss with Monroe about em. Cutting stalks ½ a day

24, Sat. Caught a beaver Cutting stalks 1 day

25, Sun. Sold Bartlow 2 deer skins for 1.50 Stretched a beaver Revival

26, Mon. Cutting Stalks ½ day got 6 Bushels of wheat from McCanless for Shippee got 1.00 damages from Monroe, and ordered off the place for ever. Charlie paid 4.00 Revival

27, Tues. Cutting Stalks 1 day Revival

28, Wed. Cutting Stalks 1 day took up 1 mare & 2 horse Colts belonging to Kelly on the Rye. damages nothing this time. Revival

March 1877

1, Thurs. Cutting Stalks ½ day [total] 6½ days only half done Rain in the afternoon Lit the fire. No dance

2, Fri. Cutting stalks 1 day Revival

3, Sat. Snow Storm last night Revival closed & Crites & Joel Mattingly & wife Joined & others 7½ days 7½ Revival

4, Sun. Hard frost last night Breaking corn Stalks this morning from 3 oclock till sunrise 10 acres loafing all day

5, Mon. Went to Fairbury [Received for] 2 beaver[,] 1 Mink 2.25 Bought 6 yds Jeans 2.40 Shirting 12 yds 2.16 Cigars 35 15

6, Tues. Took up the traps

7, Wed. Cutting Stalks 1 day paid Shippee 2.50 Borrowed 1.00 of Mrs Smith due to him 2.50

8, Thurs. Cutting Stalks 1 day

9, Fri. Cutting cornstalks 1 day

10, Sat. Cutting Stalks ½ a day Went to Fairbury with wheat 11.00 Skunks 55 Smith 5.50 Cigars 50 papers 20 Recieved a letter from John Castle, Waterloo[,] Black hawk Co Iowa

11, Sun. paid Shippee 2.00

12, Mon. Cutting Stalks ½ a day Raking Stalks ½ a day Smith & team ½ a day

13. Tues. Cutting Stalks ½ day Raking ½ a day Burning ½ day Smith & Team ½ day Smith Burning ½ day making ¾ & ½[.] Warm today 8.20 P.M. hard wind from North, dark cloud rising in N. W. Starlight

14, Wed. Cutting Stalks ½ day finished the stalk cutting Raking Stalks ½ a day Smith & team ½ a day.

15, Thurs. Burning Stalks 1 day Smith 1 day dance 6 No. out Reciepts 50 cents paid Monroe 1.00[.] 8 cts left

16, Fri. Windstorm Went to J T Mattinglys for cross cut Saw J. T. had moved to town

17, Sat. Went to Fairbury on foot Bolts 10 cigars 80 paper 10 Boots 35 stamps 5 [total] 1.40 Horse race on fair ground petes Beat the pony Came home with Mrs. Smith Ben paid us a visit at night

18, Sun. Staid at home with Ben

19, Mon. Raking Smith's stalks 1 day Burning till 10. P.M. ½

20, Tues. Burning Smith's Stalks 1 day

21, Wed. Raking up the Scatterings ½ a day Cleaning wheat ½ a day

22, Thurs. Sowed 8 bushels of wheat below the Shed, hitched up Doll and Charlie and dragged it in one way, cold and windy

23, Fri. Freezing cold and Snowing, staid in the house all day wrote to Wm Coon John Castle and Dolton Brothers 60 cts for correspondent And Mac Dougall

24, Sat. Went to Fairbury Books 25 cigars 20 Stable 10 Pool 20 Treat 25

25, Sun.

26, Mon. Finished dragging in wheat below the Shed

27, Tues. Sowd 8 bushels on Milts Cherrick wheat ½ a day plowing it in ½ a day

28, Wed. plowing in wheat 1 day

29, Thurs. plowing in wheat ½ day Rolling ½ a day five acres on Milts finished Lightning midnight dance till 1 A.M.

30, Fri. Thunderstorm last night, heavy rain Mr. & Mrs. Crites paid us a visit 4 deer rising[41] on the Rye

31, Sat. Went to Fairbury with Road report to Commissioners Stamps 20 Pool 90 Stable 10 News letter 25 30 Borrowed of Mrs. Smith $1.10 one dollar & ten cents

April 1877

1, Sun. Staid at home grasshoppers hatching out in warm places[42]

[41] The word *rising* is probably used in the sense of *coming up* onto the rye field.

[42] In Nebraska and the Middle West, 1874 was *the* grasshopper year. That year many farmers were wiped out, and the whole economy of the region shaken. Three years later, beginning with the first sign of the

2, Mon. Sowd 8 Bushels of Cherrick wheat on 5 acres, making 10 acres of Cherrick plowd in & 5 acres dragged in Borrowed of Smith 24 bu sowing ½ a day plow ½ a day Voted 25 mills for School

3, Tues. Plowing in wheat

4, Wed. Plowing in wheat ¾ Cleaning wheat ½ a day 10 bushels

5, Thurs. Sowd 10 Bushels of Tee wheat ½ a day Plowing in wheat ½ a day

6, Fri. Plowing in wheat 1 day, 3 acres today grasshoppers hatching out on the Rye west of house

7, Sat. Plowing in wheat ½ day Went to fairbury afternoon Bor[rowed] of Mrs Smith 80 cents Whiskey 35 plow 25 cigars 55 Stable 10 [total] 1.25 Recieps from State grange 20 copies of The Clipper[43] got in 15 acres of Cherrick & 5 acres of Tea wheat

8, Sun. Staid at home and took up W Crites Cattle Charged him 2.00 on the old account, he will work when wanted 2 days

9, Mon. Cleaned up 20 bushels of wheat, sowd 10 bu Smith 10 bu[,] due Smith 14 bu. Plowing ½ a day

10, Tues. Plowing 1 day in wheat

11, Wed. Plowing till 10 A.M. Cleaned up wheat Sow'd 6 bushels Commenced plowing it in finished sowing 24 bushels Cherrick [and] 26 bushels China Tea in all 50 bushels

12, Thurs. Finished plowing in wheat the hoppers have Commenced to work on the young wheat Plowing in 24 acres in 9 days McCords cattle on the rye

13, Fri. very fine Rolling wheat 1 day trying to Smash the hoppers. Killed millions

14, Sat. very fine Rolling Wheat ½ day Smith helped ¼ day Went to fairbury Pool 30 whiskey 30 Beer 15 Stamps 10 cigars 25 Borrowed of Mrs. Smith 1.00

15, Sun. very fine Mike Higgins paid us a visit, so did Mary Crites grasshoppers hatching heaps on the rye they are taking the Rye at home, and are eating up the wheat that is up

16, Mon. Rolling the Rye ¼ Smith ¼. to kill hoppers Rain plowing for Oats ½ day Killed 1 bushel

17, Tues. Rain, Hail, Thunder and lightining last night. did not hurt the hopper grubbing the grass land ½ a day

18, Wed. Rolling the Rye to kill Hoppers. Broke McCords roll Raining 10 A.M. till night. Theodore got my mail. 1 letter from Mack Dougall Killed 1 Bushel hoppers

19, Thurs. Wind north Killing hoppers with a shovel on the Rye near the R. R. digging the north side of the ditch perpendicular to Stop em Smith helped ¼ day Kill 1 bus hoppers fixd McCords Roll

20, Fri. South Wind White frost last night fixing the ditch hauled 1 load of straw dug holes and caught and burnt about ten bushels of hoppers

21, Sat. Strong wind S[outh] finished the ditch Went to Fairbury borrowed of Mrs. Smith 6.00 Lumber 3.00 Tin and nails &c for Trap 4.00 Pool 50 Stamps 25 Beer 50 due to E. Eldridge 4.00

22, Sun. Wind south hoppers hatching all over pasture covered east of creek with hoppers travelling north

23, Mon. Killing hoppers till noon with shovels. heavy thunderstorm last night Breaking and ditching below Milts field to Stop em. Smith 1 day Crites 1 day 3 bu Killed

24, Tues. Tramp went through my pocketbook. I went through him. Hauled Straw to head off the hoppers on N. E. corner of the Rye, Crites ditching 1 day. Smith rolled em we then burnt em. There's a chance yet. 3 bushels killed.

25, Wed. Crites & Smith ditching 1 day each Made a patented hopper catcher and tried it. too late but believe it will work tomorrow Crites 3 days work

26, Thurs. W[ind] N[orth] E[ast] ditching. Smith 1 day. finished digging the ditch. Rain towards night. Millions of hoppers in the Widdows Timber Minnesota at prayers vs. grasshoppers. 4 P.M. turning cold, raining

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grasshoppers on Apr. 1, Hawkes recorded the grim three-months-long fight (see the entries for April 1–June 24) with rollers, shovels, "a patent hopper catcher," and fire.

[43] The *Fairbury Clipper* was a weekly paper edited and published by John Saxon, attorney, and a "Butler," beginning early in April 1877. See the *Fairbury Gazette,* Apr. 7, 1877. Hawkes apparently took 20 copies of the first issue for promotional purposes in his own neighborhood. His interest in the *Clipper* undoubtedly derived from its Greenback Party leanings and resulted in his making actual contributions to its columns. The few scattered issues known to be in existence are in the Nebraska State Historical Society's collections.

27, Fri. Wind N.E. Rain all night 40° Rain all day, Cold. 6 P.M. 36° 9 P.M. 34° Chincking for the clipper [44]

28, Sat. Cold 34° Fairbury wheat 12.90 [Paid out] Times 2.00 Eldridge 4.00 gazette 2.00 Soap 5.00 Hennibery 1.00 lent Pool 40 whiskey 20 Cigars 15 Mrs. Smith cigars 25 cts

29, Sun. White frost 8 A.M. hoppers in piles appear dead, breathe on them a few moments and they appear lively Killing hoppers on the N.E. corner of Milts Rye with a shovel Killed Millions 1 Bu Killed 9 P.M. 34°

30, Mon. Killed 3 bu hoppers Hauling Straw 4 loads Smith Rolling 2 hours towards night hoppers coming in on the Rye near the railroad East of Milts field by Millions Commenced ditching to head them off

May 1877

1, Tues. Commenced ditching at 1:30 A.M. ½ past one Smith at 3 AM Smith plowing for oats 1 day, Crites ditching with me one day Trapped and Killed ten bushels of hoppers

2, Wed. 39 bus ditching with Crites Smith finished plowing for Oats for me ½ day harrowing the wheat that was eat by hoppers[,] ½ a day Trapped and killed Seven bushels of hoppers Pete and Dan come down Crites 1 day. Mollie brought home with the measles

3, Thurs. Ditching ½ a day Crites 1 day Sowing oats 15 bu ½ day Smith cleaning oats ½ Harrowing in oats ½ day 3 bu hoppers killed

4, Fri. Ditching 1 day Crites 1 day Smith ½ a day at drag Finished 5 acres of oats Wrote a letter to Sec[retary?] S[tate?] G[range?] Killed 6 bu hoppers

5, Sat. Crites ¼ day ditching till 8 A.M. Rain. Went to Fairbury Borrowed Mrs. Smith 7.00 Express 6.25 [for] Maple Sugar from J. H. Shippee Pool 10 Cigars 5 Crites 7¼ days

6, Sun. Sold Crites ½ ton hay for 2.00

7, Mon. ditching Crites ¼ give out 18 pails full of hoppers burried 6 Bu. [total] 54 bus

8, Tues. ditching and Cleaning the ditch 15 bucketfuls tried the hopper trap 1 hour caught 1 bushel Making 6 bushels Burnt the grass north [total] 60 bushels

9, Wed. Rain, Went to fairbury Wire netting 1.00 Stamps 10 Strap 10 Cigars 25 due 20 at Turners [total] 1.45

10, Thurs. Buried Six bushels hoppers Making 66 bu Killed hoppers with a spade. Smith helped 2 hours

11, Fri. Rain Rain fixed the hopper trap

12, Sat. Rain Wrote to Aunt and J. H. Shippee Went to fairbury with 11½ bu of wheat for Smith at 1.27 for bu $14.60 Personal taxes 12.46 Paid Smith $2.15 Cigars 2 cts Whisky 25 cts got soaking wet [45]

13, Sun. Misty

14, Mon. Cleared out the ditch Killing hoppers with Spade 2 hours, made a Smasher used 2 hours. Smith ½ day McNair got his Maple Sugar paid 2.00 freight used the trap 2 hours got 1½ bushels ditch 5. [previous total] 66 ditch 5 [total]71 [bu.] Trap 1[,] 1½ = 2½

15. Tues. Cloudy Took out some grubs on Milts grass land Afternoon Killed hoppers with Smasher hoppers from Smiths pasture going in the Rye Burnt of[f] Smiths pasture East

16 Wed. hauled out 3 load Straw Smashed hoppers Burnt of[f] the grass Round the corral Mollie come back home Smith burnt grassland

17, Thurs. Very fine Smashing hoppers till noon plowed two furrows through the Rye N[orth] & S[outh] Hoppers going East Cleaned out the holes 12 bus ditch 12 + 71 = 83 Trap ½ + 2½ = 3

18, Fri. Heavy rain last night Rain all day. Creek up Ditch ruined. Milt paid us a visit. River raising

19, Sat. Went to Fairbury Poole 40 Cigars 45 Whisky 60

[44] The word *chincking* is probably used in the sense of *filling in*, i.e. providing *filler* items. W. J. Moss of Fairbury, in a personal interview on July 29, 1946, stated that Hawkes had a reputation as a "poet." Perhaps versifier would be a more accurate word. There is some evidence that Hawkes' contribution on this occasion was the following ditty which the *Fairbury Gazette* reprinted on Apr. 28, 1877:

The chaps which sold them darned machines
McCormick's, Marsh and Edwards [harvesters]
Have got our notes adriftin' round
And we are drifting h—l wards.

For evidence on the purchase terms for harvesters, see the entry for July 21, 1876.

[45] From the rain, I presume, despite the antecedent.

20, Sun. Killing hoppers with a maul

21, Mon. Very fine Commenced ditching West of the Cherrick wheat Smith 1 day Crites 1 day Myself 1 day. Caught 5 bushels of hoppers on Milts ditch 83 [+] 5 [=] 88 Trap 3

22, Tues. fine Smith helped me finish the ditch Cleaned out the ditch on Milts Caught and buried in the ditch at home 22 bushels 22 [+] 88 [=] 110 [+] trap 3 [=] 113 bushels

23, Wed. Cloudy Took out 3 bushels on Milts above the R R Cleaned out part of ditch Caught 2 bushels on the Cherrick. Too tired to measure up tonight Burnt the grass****

24, Thurs. Went around Milts in the morning laid sod on the side of ditch, dug 3 new holes and one large hole 3 ft square too put them in. Jim Higgins got 22 bu of corn yesterday at 35 cts $7.70 seven dollars & seventy cts due me

25, Fri. Smashed hoppers finished laying up the sod. Took out 12 washtubs full of hoppers good 18 bushels. 1 bu on Milts. ditching up the Rye and road. ditch 113 [+] 18 [,] 12 tubs[,] 131 [+] Trap 5 [=] 136

26, Sat. Went to Fairbury on foot with Jamieson Pool 20 Stamps 10 due 25 cts to Mrs. Smith cigars

27, Sun. Rain at night Railroad bridge Went out at nine o'clock at night

28, Mon. Watching the bridge builders

29, Tues. ditto Smith got a pass.

30, Wed. Killing hoppers on Milts wheat. Cleaned out the pits ½ a day Killing hoppers in the Cherrick and in the Rye ½ a day No[.] 8 crossed the bridge twice allright

31, Thurs. Killing hoppers on Milts pulling up milk weeds and pulling Rye out of winter wheat

June 1877

1, Fri. Killing hoppers on Milts pulling Rye out of winter wheat

2, Sat. Widows hogs in Rye Traping hoppers 2 bushels went to fairbury in the afternoon Cigars 30 Beer. checks got a letter from Shippee with a cheque of 50.00 for Mollie

3, Sun. buried 12 bushels of hoppers Making 148 bu

4, Mon. Plowing corn for Smith Rye in bloom I believe the Rye is gone up where the leaf is eat off

5, Tues. Plowing corn for Smith hoppers come out of the Rye and eat off about Seven acres of corn for Smith today they look dark on the Rye tonight. looks like a Storm in the west

6, Wed. Commenced to rain about 5 A.M. Quit at 7½ Splendid shower Plowing corn ½ a day

7, Thurs. Finished pulling the Rye out of the winter wheat pulling weeds out of the Oats Bright circle around the sun till noon heavy cloud west all day

8, Fri. 3 A.M. Raining 10 A.M. Quit. Cloudy grubbing the grass land. Mollie came home from G Hansels.

9, Sat. Went to fairbury Cigars 60 whisky 40 Fishing tackle 40 Recieved of Dan Baker for Smith 4.00 due to Smith 4.00

10, Sun. fishing nothing

11, Mon. Went to fairbury with 1 load of corn 23 [bu]. 10 [lbs.] 26 cts [$]6.00

12, Tues. 1 load of corn 24 [bu]. 10 [lbs.] 26 cts [$]6.25 Clipper 1.00 Beer .50

13, Wed. 1 Load of corn to Michael Henneberry 24 bus 26 cts [$]6.25

14, Thurs. 1 load of corn to Dan Baker 24 bu 25 cts [$]6.00 Beer 50 shoes 2.25 Tickets 7.50 hair cut 25 Mike Higgins paid for load of corn 5.00 all Square wrote a letter to Shippee

15, Fri. Pulling weeds in wheat

16, Sat. Mowing and pulling weeds in the wheat on Milts, went to Fairbury in the afternoon Cigars .50 Beer .50 Billiards .25 grasshoppers flying North

17, Sun. Paid Crites a visit Grasshoppers flying about, settled here last night

18, Mon. Crites drove us to town and brought back the team Went to St.Joe [Mo.] with Mrs. Smith to see Mollie off. Paid Mollie 3.00 due to Shippee. Ticket 2.50 Supper 50 Basket 1.00 Paid Mrs. Smith 8.50 ticket 2.50 cash 4.00 Bord 1.00

19, Tues. Came home from St. Joe about 9.00

20, Wed. Loafing Bill Voss and then Ben Campbell paid us a visit willing to help us cut our Rye Most of the hoppers have left the Wheat.

21, Thurs. Working out poll tax on the Road ½ a day above the pasture on bridge & ½ day at Rock Creek

22, Fri. Mowing and pulling Weeds out of the Wheat

23, Sat. Rain in the forenoon Went to fairbury Oil for Smith 1.15 medicine 50 cigars 90 Went to the doctor with Rheumatism in Shoulder Rain at night

24, Sun. 90° grasshoppers flying over North Our largest hoppers can almost fly Rye in the dough Mulberries Ripening

25, Mon. Storm last night. Thunder, lightening[,] Wind, Hail, & Rain Picked some Mulberries pulled some weeds in the wheat

26, Tues. Pulling weeds out of the Wheat on Milts Set the hooks heavy Cloud rising in the South west at 9 P.M.

27, Wed. 2 A.M. Heavy Storm of Rain Thunder & lightening 8 A.M. Clear Caught 2 large catfish pulling weeds out of the wheat

28, Thurs. Heavy thunderstorm again at daylight Creek up River up pulling Weeds Smith mowing weeds ½ day Caught 5 fish

29, Fri. pulling weeds

30, Sat. pulling weeds ½ day Went to Fairbury cigars 1.00 cash **** 1.00 credit to Mrs. Smith, Billiards 25 Beer 1.25

July 1877

1, Sun.

2, Mon. Borrowed Christmans Cradle Smith cradling round the telegraph poles and corners of the Rye

3, Tues. put up the Harvester and commenced Cutting Rye ½ a day Adam Crites ½ a day Binding on harvester ½ a day

4, Wed. Binding Rye till Noon George Hansell ½ & Adam Crites 1 day

5, Thurs. 104 [degrees] Shocking Rye George Hansell and Adam Crites Binding 1 day each

6, Fri. 104 [degrees] Shocking Rye George Hansell & Adam Crites Binding 1 day each finished Cutting Rye on Milts

7, Sat. 104 [degrees] George Hansell [and] Adam Crites ½ a day each cutting winter wheat and Shocking Rye Went to fairbury B noon. Rye in Shock 475 Shocks. 7,600 [sheaves] 16 Sheaves in Shock due to P. J. Tondre $3.50 for 1 gallon of Whiskey Bucket 50 Links 15 Lemonade 60 Beer 10

8, Sun. hot 104 loafing all day good Shower at night

9, Mon. cooler Commenced cutting Smiths Rye [and] Shocking it Milt Martin and Willie Crites 1 day each

10, Tues. warmer Milt Martin and Willie Crites Binding Rye, 1 day each

11, Wed. 1 Round. Showery Finished cutting Smiths Rye. Willie Crites ½ day Adam Crites ½ day Milt Martin did not Make his appearance

12, Thurs. Smith Cutting my Rye Willie Crites 1 day Adam Crites 1 day I finished shocking Smiths Rye

13, Fri. Smith cutting my Rye Willie Crites 1 day Adam Crites 1 day I was shocking up put up 200 Shocks 16 Sheaves [each] 3200 [sheaves]

14, Sat. Willie Crites & Theo Crites Binding Rye one day each Shocking 150 Shocks

15, Sun. loafing

16, Mon. Went to Fairbury due to Turner for cigars 1.20 due to P Tondre for 1 gallon wiskey 3.50 1 gallon of whiskey 2.50 to Tondre Total 6.00 drinks paid 20 cts Theo Crites tobacco 40 cts

16, Mon. Rain last night Willie and Theodore Crites half a day each Binding Rye [.] finished Shocking 40 Shocks [+] 150 [+] 200 [=] 390 [×] 16 [sheaves to the shock =] 6240 [sheaves + previous total] 7600 [=] 13,840 [sheaves]

17, Tues. Showery pulling oats out of Wheat

18, Wed. Stacking Rye Jim Bedy ½ a day 50 [¢]

19, Thurs. Stacking Rye Jim Bedy 1 day 1.00 2 Stacks of Rye put up

20, Fri. Commenced cutting China tea wheat Adam Crites & Willie Crites one day each

21, Sat. Smith cutting China Tea wheat Adam Crites and Willie Crites one day each Shocking till midnight

22, Sun. Shocking wheat 4 hours

23, Mon. finished cutting my China tea wheat 2¾ days Adam Crites and Willie Crites 1 day each ¾ each for me and ¼ day for Smith Shocking till Midnight 312 Shocks 18 Sheaves [each] 5616 sheaves of Tea wheat 234 bushels

24, Tues. Cutting Smiths Tea wheat Adam Crites and Willie Crites 1 day each for Smith. finished his Tea wheat[.] Fairbury Mrs. Smith, cigars 1.00 I Shocked about half Adam Crites 5.25 on order. at Turners

25, Wed. Cutting my Cherrick wheat Adam Crites and Willie Crites 1 day each below Corrall

26, Thurs. finished cutting the cherrick below the corral Adam Crites and Willie Crites 1 day each ¾ for myself and ¼ for Smith Cutting his cherrick 206 Shocks 3300 Sheaves 150 bu wheat on EHs[46] 11 Sheaves to half bushel

27, Fri. Cutting Smiths cherrick Wheat Adam Crites & Willie Crites 1 day each Thunderstorm, had to Quit at 5 oclock. good soaking rain.

28, Sat. Went to Fairbury Whiskey 1 gallon at P Tondres due to pete 3.50 more Sent a letter to Aunt Allender with a 3 ct Stamp What a fool?[47] & picture of Harvester? Ordered boots. due Mrs Smith cigars 28 cts Stamps 10 cts Beer 20

29, Sun. Staid at home

30, Mon. Cutting Smiths Cherrick till 1 oclock Commenced cutting My cherrick Theo and Willie Crites 1 day each ½ a day for each

31, Tues. 102 Hot Cutting my cherrick 1 day each for Theo and Willie Crites Cutting my weeds out

August 1877

1, Wed. 104 Hotter Cutting my cherrick Theo & Will Crites 1 day each finished my wheat cutting weeds out

2, Thurs. Cutting Smiths Cherrick Theo & W Crites 1 day each Cutting weeds for Smith ½ day Shocking my wheat ½ day

3, Fri. Cloudy Smith finished Cutting wheat W. Crites laying off 1 day Shocking my Cherrick

4, Sat. Went to fairbury Rec at the Bank $80.00 paid out for Sundries on Memorandum page 39.90.[48] Paid Jim Bedy 1.00 due him 50 cts

5, Sun.

6, Mon. Cutting Smiths oats Adam and Willie Crites 1 day each Rheumatism

7, Tues. Cutting my oats Adam and Theodore 1 day each Sent Mary Crites for the Doctor Rheumatism last night, Oh, God.

8, Wed. Jim Beedy commenced a months work for me for $16.00 per month Finished cutting my oats. Theodore Binding ½ a day, Shocking ½ day

9 Thurs. Smith and Jim finished Shocking my oats at noon Cutting Smiths Millet in afternoon.

10, Fri. Jim and Smith Shocking his oats and binding his wheat due to Smith for harness $11.00

11, Sat. Fairbury paid Milt Martin for 2 days binding 3.00 Machine oil 85 Medicine 50 Saloon 75 Campbell, 1.50 due for harness 20.00

12, Sun.

13, Mon. Stacking my wheat on Milts Aaron and George Wells and team 1 day each Willie Crites 1 day Smith team & Bedy 1 day each

14, Tues. Stacking my wheat Aaron & George Wells & team 1 day ea[illegible] Smith, Beede, Will Crites 1 day each Adam & Theodore Crites & team ½ a day each

15, Wed. finished Stacking my wheat Adam, Theo, Will, Crites and team ½ a day each Smith, team, and Beede ½ a day each. Stacking for Smith Adam, Theodore, & team Beede, Smith & team ½ a day each

16, Thurs. Settled with Adam Crites, up to date, noon. due to me 1.30 Theo, Adam & team ¼ day each, Stacking for Smith ½ a day each till noon

17, Fri. Went to Fairbury with A. Crites, let him have order on store 10.00 Linament 30 Salts 30 Brimstone 40 Cigars Beer 35

18, Sat. Wheat 70[¢] Borrowed 10 bu of wheat of Adam Crites let him have 1 bu corn for threshers teams Smith & Jim hauled my winter wheat up to the Machine at A. Crites Busted wagon wheel

19, Sun. wheat 50[¢]

20, Mon. wheat 65[¢] Went to Fairbury with Smith signed two notes with him for new wagon due 25.00 Jan 1, 1878 & one 70.00 June 1, 1878 Rain coming home Cigars 1.00 Medicine 50 Jim threshing at Crites ½ a day Rain

21, Tues. Jim threshing at Crites ½ day threshed my winter wheat 19 bushels

[46] The diarist was probably referring to himself.

[47] The aunt probably lived in England. Therefore the letter rate was 5 cents as opposed to the prevailing 3-cent domestic rate. *United States Official Postal Guide . . . 1876,* 13, 42.

[48] Aug. 4. Mrs. Smith 24.25 Cheese 45 3 cans fruit 65 cigars 1.50 Flour 1.75 Apples 25 Bailey 2.35 Tondre 3.70 Theodore 2.00 Shoes 2.00 Jim Bedy 1.00 [total] 39.90.

22, Wed. George & Dan Bishop and team, Beebe & Smith and team, stacking Rye for me on Milts 1 day each

23, Thurs. Stacking Rye forenoon Oats in afternoon George & Dan Bishop and team, A Crites Theo & team, Smith and team 1 day each Jim commenced to plow on Milts

24, Fri. Finished Stacking my Rye. George & Dan Bishop and team [,] A Crites, Theo, & team[,] Smith & team 1 day each due to Dan & Geo 9.00 Commenced on Smiths Rye

25, Sat. Too windy Settled with Willie Crites paid him 6.00 due 25.00 J. Beebe 5.25 Beef 1.00 Apples .75 Cigars .25 Doctor, pills & powders for stiffness of Joints Rheumatism

26, Sun. Sick all day

27, Mon. Some better Smith & Jim Stacking his Rye

28, Tues. Sick Jim at plow on Milts Stacking Millet for Smith & Rye

29, Wed. Sick Cutting weeds on Milts Smith & Jim

30, Thurs. Jim at plow on Milts 1 day Smith cutting his millet for hay

31, Fri. Jim at plow on Milts ½ a day Stacking Millet for Smith ½ a day

September 1877

1, Sat. Rain Jim at plow on Milts 1 day

2, Sun. Quarterly meeting of M. E. church in the grove at the ford[49] Lide nearly dide last night 9¼ lbs

3, Mon. Smith went to town with Corn, and lays to be Sharpened. No signs of Jim

4, Tues. Jim at plow 1 day

5, Wed. Jim at plow till noon Stacking Smith Millet in the afternoon

6, Thurs. Jim at plow 1 day Smith cutting hay on Milts

7, Fri. Jim at plow 1 day Smith cutting and raking hay on Milts Mr Campbell paid us a visit Paid Jim 5.75 Making in all 11.00 due to him 5.00 More Hired again for 1 month for 16.00 per month

8, Sat. Jim at plow ½ a day A Crites & Smith hauling hay 5 loads ½ a day each Rain afternoon

9, Sun. Smith cleaned up the winter wheat

10, Mon. Smith sowing winter wheat, Jim at drag went to Fairbury 4 P M Cigars 2.10 Beef 1.00 medicine .90 Beer .30

11, Tues. Smith finished sowing Winter wheat Jim at drag and roll. Smith cutting hay ½ day

12, Wed. Smith cutting hay Jim finished the winter wheat about 10 acres 19 bu [seed]

13, Thurs. Jim hauled 2 loads of hay then went to plow, Theodore helping Smith haul hay, windy, Theo 1 day Dunned by proxy for Wells

14, Fri. Theodore hauling hay ½ a day Jim at plow ½ day Smith and Jim Raking weeds ½ day Smith sowing Rye Jim at drag ½ day

15, Sat. Jim at plow 1 day

16, Sun. Mrs Higgins Jack & Kate paid us a visit

17, Mon. A Crites & Theodore 1 day each hauling hay for Smith. Jim gone to Beatrice Burnt weeds & fire brake near track

18, Tues. A & Theodore Crites hauling hay 1 day each for Smith Went to fairbury. Kinnamon quit Doctoring me for Rheumatism. Sleeping powders 35 apples 35

19, Wed. Adam Crites hauling hay for Smith till noon Smith cutting ½ a day for Crites. hauled 3 loads at Night in the Barn A Crites ¾ day today No Jim yet

20, Thurs. Smith cutting and raking hay

21, Fri. Theodore 1 day hauling hay. forenoon ½ day and night ½ a day for Smith

22, Sat. Theodore 1 day hauling hay for Smith Went to Steele City to Greenback Caucus Cigars 25 cents

23, Sun.

24, Mon. Went to fairbury Paper [and] Envelopes 50 Medicine Pease .75 Mrs Smith pills 25 Cigars 10 Halter 10

25, Tues. Hired Theodore Crites till Jim come back or for 1 month at $16.00 per month Theo & Smith plowing on Milts 1 day each

26, Wed. Theo & Smith plowing on Milts 1 day each Jim got back and reported

27, Thurs. Jim at plow ½ day Roll ½ a day Theo at drag. Smith sowing Rye Borrowed 20 bu rye Beef 1.00 Bitters 1.00

28, Fri. Jim and Theo putting in Rye Smith sowing Borrowed 20 bu Rye of Adam Crites Making 40 bushels

29, Sat. Jim and Theo putting in Rye Jim got an order on Turner for pants $3.15 Went to Greenback Convention

[49] Probably Wolf's Ford. See footnote 11.

30, Sun. Ben Turner paid us a visit shut Hanks sow and pigs in the henhouse

October 1877

1, Mon. Jim at drag on Rye Theo at plow for Smith

2, Tues. Jim finished the Rye at 10 A.M. plowing for Smith Theo threshing for Bogs ¾ day plow ¼ day

3, Wed. Rain Jim at plow in the afternoon ½ day fixing the Bins in barn forenoon ½ day Theo plow for Smith ½ a day afternoon

4, Thurs. Went to fairbury Jim and Theo went to the S. S. picnic[50] cigars 25 cts

5, Fri. Jim and Theo at plow for Smith 1 day each

6, Sat. Letter to Aunt Jim at plow for Smith 1 day Theo ½ Went to Fairbury in afternoon Theo Boots 5.00 Cigars .25 Beef .35 Stamps 11 2 doz sacks 5.00 Borrowed of B. Turner 10.00

7, Sun. Deer hunting with Ben Turner. saw 2 in the timber

8, Mon. Threshing Tea wheat 203½ Cherrick 37 Bogs, Charlie, Adam [,] Hansell, George and Dan B. & team 1 day each Jim and Theo 1 day each

9, Tues. Threshing Charlie [,] Adam, Hansell, George & Dan & team, 1 day each ¾ for myself, ¼ for Smith Tea wheat 203 bu Cherrick 229 [bu.] May wheat[51] 19[bu. Total] 451 [bu.] paid Mary Crites 50 cents Smith 110½ bu cherrick

10, Wed. Threshing for Smith, Rye 428 Charlie[,] Adam[,] Hansell[,] George & Dan & team ¾ day each West McCord ½ day Jim & Theo 1 day each

11, Thurs. Jim hauled 2 loads of Rye for Smith. Borrowed of Smith 22.80 Boston 2.15 cigars 1.50 Paid Theo Crites 2.00 Dan Bishop 10.00 Charlie McCanles 2.00 J. Hollenback 1.00 [total] 18.65

12, Fri. Theo drag Rye for Sm[ith] Jim went to town with wheat. 41 [bu]. 10 [lbs.] $33.75 Paid Dan 5.00 Jim 2.00 Ben 10.00 Cigars 4.00 Drinks 30 String 25 Beef 70 Salts

13, Sat. Jim plowd fire land help[ed] Theo finish Smiths Rye. Went to Fairbury 42½ bu wheat at 82 cts 34.85 Stamps 25 wine 25 a Alterative Salts[52]

14, Sun. Prowled in the Timber found Wahoo[53]

15, Mon. Jim at plow on Milts Theo cutting weeds in garden & cutting firewood 1 day each Rain in afternoon for harvesting Paid on order of Willie Crites to Cam Courtney 25.00 twenty five dollars

16, Tues. Misty Jim at plow on Milts Theo at plow for Smith

17, Wed. Jim at plow on Milts Theo at plow for Smith

18, Thurs. Misty Paid George Hansell 2.00 two dollars on account Jim at plow on Milts Theo [at plow] for Smith 1 day each

19, Fri. Rain Theo & Jim 1 day each killing a pig Settled with Jim paid $15.00 due him .70 cents

[50] Probably the annual picnic of the Jefferson County Sunday School Association.

[51] This reference to May wheat is not sufficiently extensive to permit varietal identification. For descriptive and historical data on the varieties with the word *May* as part of their names, see Clark and Bayles, *Classification of Wheat Varieties Grown in the United States*, 65, 87.

[52] The alternative was probably one of the group of medicines, principally iodine, arsenic, iron, and compounds of mercury and of sodium or potassium, which were commonly used in attempted cures of various chronic ailments such as rheumatism, arthritis, etc. See also footnote 29.

[53] The name *wahoo* has been applied to various American trees and shrubs. Hawkes was probably referring to the waahoo or burning bush, *Evonymus atropurpureus* Jacq., a treelike shrub indigenous to the region from New York to Wisconsin and Nebraska and other sections to the westward and southward. It is ornamental in the fall because of its copious crimson fruit resembling the common bittersweet. The plants had the reputation of being poisonous to cattle. *Gray's New Manual of Botany* (ed. 7, New York, 1908), 556. Charles E. Bessey, in *A Preliminary Report on the Native Trees and Shrubs of Nebraska* (Nebraska Agricultural Experiment Station, *Bulletin 18*, 1890), 13, stated specifically that the waahoo "Occurs in the southeastern counties from Jefferson to Saline, Butler, Sarpy, Cass, and Nemaha."

The word *wahoo* is also applied to the bark of this shrub. The bark is a mild purgative and cholagogue. *Gould's Medical Dictionary* (5th revised ed., Philadelphia, 1945), 493.

The winged elm is sometimes called *wahoo*, but it is unlikely that Hawkes meant this tree as it is usually regarded as being native to areas somewhat south of Nebraska. *Gray's New Manual of Botany*, 346.

20, Sat. Rainy Smith went to town Theo staid at home

21, Sun.

22, Mon. Wheat 40 bu 32.70 Coons Taxes 19.45 Recusitator[54] 8.60 Medicine 4.40 Plow 1.00 Socks 1.00 Stamps cigar 35 Smiths Harness 60 [total] 35.40

23, Tues. Wheat 40½ [bu.] 32.40 Taxes $35.10 Riley for Smith 25 Cigars 15 Theo plow on Milts

24, Wed. Wheat 40⅝ [bu.] 32.70 Taxes for 1875[,] $18.62 Mrs Smith Tax 4.78 St Joe Gazette yr 1.00 Beer Cigars .60 Theo at plow on Milts

25, Thurs. Hauled Rye for Smith 44 bu Theo at plow on Milts

26, Fri. Hauled Rye for Smith 44 bu Theo at plow 1 day

27, Sat. Hauled 1 load of Rye for Smith 42 bu Theo at plow

28, Sun.

29, Mon. Hauled 2 loads of Rye 86 bu Smith Theo finished plow

30, Tues. Threshing for Smith Charlie, Theo, Adam, Justiss, Hansell, W. McCord, Dan, George & team 1 day each for Smith Smith Wheat 139 bu

31, Wed. Threshing Charlie, Theo, Adam, Justiss, Hansell, West McCord, Dan[,] George & team ½ day. 1 day each ¼ for Smith ¾ for Myself Oats 229 Tn [?] 200 Rye 296

November 1877

1, Thurs. Paid Charlie Mc. 2.00 Pd West McCord $2.50 Paid Theo Crites 11.00 by Mrs Smith

2, Fri. Rye 80 bu 24.10 Paid A Crites 6.00 Theo Crites 6.00 Smith collar Paid 2.50 Note bank 85.10 Cigars whiskey 40 Rec 100.00 on Note to L. Kay due 1 year at 12 per cent

3, Sat. 83 bu. Rye 24.90 Paid Hansel 4.00 Kinnamon 5.00 Boots 7.00 Cheese 3.50 Chair 3.00 alcohol 1.50 etc. etc 90

4, Sun.

5, Mon. Rye 42 bu Reye 12[.]60 Braces 50 Pete 1.30 apples 60

6, Tues. Election Loaned Duncan Campbell five dollars[.] dinner 25 Cigars 50 Duncan has paid 5[.]00 back June 1 1878

7, Wed. Misty Staid in the house

8, Thurs. Snowing Kept in the house

9, Fri. Adam Crites got 4 bu of wheat due to him 6 bushels indoors

10, Sat. fine Fairbury[.] sent 3 papers to B. Allender [Received] Rye 42 12.60 [Paid] whiskey 7.70 Flannel 2.00 Sulpher 15

11, Sun.

12, Mon. threshing Cling & Charlie 1 horse[,] Ben & Joe[,] Adam & Theodore[,] Hansell & West McCord[,] George, Dan & team 1 day each Rye at home 610 bu

13, Tues. Pd Joe Campbell 1.00 Cling[,] Charlie[,] 1 horse[,] Ben, Adam, & Theo, Hansell & West McCord[,] Dan[,] Charlie & team 1 day each

14, Wed. finished Threshing Rye 1085 Oats 229 Wheat 451 Paid Ben 2.25 Cling & Charlie 5.50 and 5.00[.] Settled to date Charlie, Cling, Ben, West[,] Adam, Theo, Dan ¼ [day] each

15, Thurs. Fairbury 2 loads of Rye 84 bu $25.20 [Paid] Petes 1.60 Cigars 25 Reed .50 Susan B. 1.50 George Hansell 2.00

16, Fri. Rye 84 bu 25.20 Paid Treats. 1[.]10 Turner & K[ennedy] 15.00 Mrs. Smith loan 1.00

17, Sat. Rye 84 bu 25.20 [Paid] copperas 10 Novels 30 Cigars 15 Wine 40 Stable 15

18, Sun.

19, Mon. 84 bu Rye 25.20 [Paid] Pool 75 Siding for Smith 1.60

20, Tues. Smith Wheat 40 bu at 78 cts 31.20 Paid Oil can 1.00 Settled with Peter Tondre for four gallons of Whiskey 13.00 3 at 3.50 & 1 at 2.50 W[ine?] & cigars 70

21, Wed. Indianapolis Sun 2.00 Beef 40 cigars 25 2 loads of wheat for Smith 80 bu 62.40

22, Thurs. Rye 84 bu 25.25 Paid wine & cigars .60

23, Fri. Staid at home

24, Sat. Rye 42 12.35 Paid Turner &

[54] This item which Hawkes called a "recusitator" was probably one of the many patented gadgets developed and marketed during the middle of the nineteenth century which were supposedly derived from galvanic research or which at least capitalized upon the widespread publicity given that research. The theory was that electric and magnetic currents had curative powers. Most of these gadgets, however, had no source for currents of any kind, and few were even magnetized. Most, if not all, would today be classed as implements of quackery.

Kenedy 36.29 Cigars .35 Liz applied the Recusitator on Back

25, Sun.

26, Mon. Staid at home

27, Tues. Staid in the house Dan and George Bishop paid us a visit. Settled with them for Stacking and threshing and paid 14.00 which squares accounts to date

28, Wed. Cold

29, Thurs. River froze over

30, Fri. fine Rye 42 12.60 Paid Sheldon for Harness $20.00 Cleaning the clock 1.00 Axe helve[55] 30 cigars 20 wine 10 Saw three deer on the Winter Wheat

December 1877

1, Sat. Got a Shot No effects

2, Sun. Kept in the house

3, Mon. Misty Staid at home

4, Tues. Tracking in timber

5, Wed. fine Fairbury 1 pint of whiskey .70 Wine .30 Cigars .10 Rec 1 copy of [Indianapolis?] Sun Crites cutting wood on halves

6, Thurs. Fine Crites chopping and hauled 1 load with side boards. Smith 1

7, Fri. Very fine

8, Sat. Very fine Rye 42 bu 12.60 paid threshing $67.20 Liniment 75 Apples & cigars 1.00 Stamps 50 Wine 30 Aaron Wells 4.00 [total] 73.75 Mrs Smith paid 1.50 for liniment and pint whiskey

9, Sun. Borrowed of Mrs. Smith yesterday $10.00

10. Mon.

11, Tues.

12, Wed.

13, Thurs. Table cloth 1.25 Combs .45

14, Fri.

15, Sat. Rye 43 bu 13[.]00 pd Age of Reason 1.00 Wine 20 cigars 50 Issaac Grant James arrived

16, Sun. Very fine Went to Beatrice with Ike G. James to see E H Hill who sent draf[t]s of 25.00 to his mother the next day

17, Mon. Rainy Came home from Beatrice Hotell 1.50 Stabling .75 Cigars 50 [Total] 2.75

18, Tues. Very fine paid Mrs. McCanless A visit Malcolm Campbell had husking and dance at night in Milts old House

[55] The helve of an ax is its handle.

19, Wed. Misty paid A Crites a visit

20, Thurs. loafing around home

21, Fri. ditto

22, Sat. paid West McCord for threshing 2.25 Borrowed of Mrs. Smith 2.00

23, Sun.

24, Mon. 43 bu Rye 12.90 Borrowed of Mrs Smith 4.25 Paid on Note 26.25 Apples .70 whiskey 30 Cigars 70 Note 6.40 [total] 34.35

25, Tues. Took dinner with Crites

26, Wed.

27, Thurs.

28, Fri.

29, Sat. Cigars 50 cents[.] by Mrs Smith 10.00

30, Sun.

31, Mon.

BIOGRAPHICAL DIRECTORY

This directory provides such information concerning the persons mentioned in the diaries as is necessary to identify them in point of their period and place of residence in the community, their social or economic relationship to Hawkes, and such additional facts as have seemed pertinent. I regret that so many have had to remain "Unidentified," but the time necessary to complete the search through files of Jefferson County newspapers, the records of the County Court, Register of Deeds, etc. has not been mine. On the other hand I doubt that a knowledge of these unknown persons, most of whom are mentioned only once, would contribute to our concept of life in the community which Hawkes created and preserved for us in his diaries.

Adam. See Crites, Adam.

Allender, "Aunt." B. Allender. Not positively identified but probably a relative of Hawkes. When he died, the *Fairbury Gazette* for Nov. 29, 1902 remarked: "He left no relatives save a sister in England." Of the correspondents whom Hawkes mentioned in the diaries only "Aunt" Allender is referred to in a manner implying relationship. See footnote 47.

Andrews, Ad. Probably Hawkes' neighbor, Hugh J. Andrews, who entered upon land in sec. 9, T. 1, R. 3 on June 28, 1871.

Aunt. See Allender.

Bailey. W. W. Bailey, Fairbury druggist. *Fairbury Directory . . . 1874*, reprinted in Charles Dawson, *Pioneer Tales of the Oregon Trail and of Jefferson County* (Topeka, 1912), 338–339.

Baker, Andrew (Andy). The first of six brothers (four of whom, Andy, Dan, Henry, and John are mentioned by Hawkes), who emigrated from Missouri about 1863–65 and homesteaded west and north of present Fairbury. For a few years they engaged in freighting along the overland trails in addition to farming. Dan

spent most of his life in Fairbury "where he engaged in business." Dawson, *Pioneer Tales, 389–391.*

Baker, Dan. *See* Baker, Andrew.

Baker, Henry. *See* Baker, Andrew.

Baker, John. *See* Baker, Andrew.

Bartlow. *See* Partlow.

Beach. Probably Benjamin Beach who entered upon land in sec. 29 and 33, T. 1, R. 3, under dates of Feb. 22, 1870 and June 22, 1869 respectively.

Bedy (Beede, Beedy, Beebe), Jim. Unidentified. Hawkes' obvious unfamiliarity with the name (see entries for August 8–22, 1877) suggests that he was a newcomer to the area, perhaps a transient farm hand. He may have been from Beatrice (see entries for Sept. 17 and 26, 1877).

Ben. *See* Turner, Ben. Occasionally the reference is to Benjamin Campbell.

Bill. *See* Voss, Bill. "Bill" may also refer to Hawkes' nearest neighbor, William R. Friend.

Bishop, Dan. Unidentified.

Bishop, George. Unidentified.

Boggs. Probably James O. Boggs whom Dawson, *Pioneer Tales,* 466–467, says moved from Dawson County to Jefferson County in 1874 or 1875 and purchased a farm ½ mile east of the present town of Endicott.

Border. Unidentified.

Boyle, C. C. Opened a law office at Fairbury in 1870. Partner in a real estate firm with George [?] Cross during 1871–73. Appointed probate judge in 1871 to fill an unexpired term and thereafter elected for two succeeding terms. A. T. Andreas, "Jefferson County," in *History of the State of Nebraska* . . . (Chicago, 1882), 998. These two terms must have been after 1873 for during that year Boyle's signature appears on district court records as "Deputy [Clerk]."

Brawner, William [T.] Overland freighter, farmer, and shoemaker. Settled in Jefferson County in 1862–63. Reputedly served as the first county physician in 1863. Between the opening of the stage mail service from Seneca, Kansas, and the establishment of the town of Fairbury, he served as postmaster. Dawson, *Pioneer Tales,* 300, 332, 461.

Brockway, E. A. Unidentified.

Broshere, Dalton. Unidentified.

C. C. Probably Cam Courtney or Charity Crites *which see.*

Campbell, Benjamin. Son of Donald Campbell.

Campbell, Donald. Usually referred to in diary as "Mr. Campbell." According to Dawson, *Pioneer Tales,* 448, he settled in Jefferson County in 1867. Entered upon land in sec. 15, T. 1, R. 3, on June 15, 1869. He was the father of a large family including Malcolm, Duncan, Benjamin, and Joe.

Campbell, Duncan. Son of Donald. Probably the earliest school teacher in what became District 7 where he preceded John G. Hollenbeck. An active member of the Greenback Party. As the party's candidate he was elected county treasurer in 1877 and secretary of the party's county organization in 1878. Although he had only one leg, he nevertheless seems to have actively engaged in farming. Entered upon land in sec. 3, T. 1, R. 3, May 6, 1869.

Campbell, Joe. Son of Donald.

Campbell, Malcolm. Son of Donald.

Cap. Unidentified. May refer to Captain Chester Andrews, prominent stockman of Steele City. Andreas, "Jefferson County," 1001.

Castle, John. Unidentified.

Champlin, [L. C.] One of the firm of Cropsey and Champlin which operated the Fairbury Mills and Elevator. Mayor of Fairbury, 1875–77. Andreas, "Jefferson County," 997–998.

Charlie. *See* McCanless, Charles.

Christman's. The Christman homestead (Dawson, *Pioneer Tales,* 276) was in sec. 11, T. 1, R. 2, about 4 miles south of Fairbury. It was entered by Harriette L. Christman on Dec. 30, 1862.

Cling. *See* McCanless, Clingman.

Cook, Mollie. *See* Shippee, Mollie (Cook).

Coon, William. Near neighbor of Hawkes. Entered upon land in sec. 8, T. 1, R. 3, Nov. 21, 1866. Apparently no longer residing in the county or on a trip during the years covered by the diaries.

Courtney, Cam. Unidentified.

Crane, Morgan. Settled in Jefferson County in 1866, homesteading in "Sec. 25 and 30, R. 3 and 4, Twn. 1." This property he sold in 1874 and purchased a place ½ mile north of Steele City. Elected county surveyor in 1869 and served as a member of the board appointed to create the school districts. Andreas, "Jefferson County," 1001.

Crites, Adam. Entered upon land in sec. 32 and 33, T. 2, R. 3, Oct. 18, 1869. Son of Charity and brother of Henry. Adam was probably the father of Theodore and Willie and perhaps also of Ed and Mary.

Crites, Charity. Probably widow of Ben Crites and mother of Adam and Henry Crites. Dawson, *Pioneer Tales,* 321, says she settled on Rock Creek near the present Endicott in 1867. She was one of the charter members of Mount Vernon Grange. Probably also mother or grandmother of Ed, Mary, Theodore, and Willie Crites.

Crites, Ed. *See* Crites, Charity.

Crites, Henry. Entered upon land in sec. 3, T. 1, and sec. 34, T. 2, R. 3, Oct. 30, 1869. Probably brother of Adam and son of Ben and Charity.

Crites, Mary. *See* Crites, Charity.

Crites, Theodore (Theo). *See* Crites, Charity.

Crites, Willie. *See* Crites, Charity.

D.C.J. *See* Jenkins, D. C.

Dan. Not positively identified but probably Dan Baker; *or* Dan Bishop, *which see.*

Dolton Brothers. Unidentified.

Dooley's. A Fairbury hotel and eating house. Andreas, "Jefferson County," 997.

Dunbar, John. One-time owner of the Jenkins Mills which he sold in April 1876. *Fairbury Gazette*, Apr. 8, 1876. At the same time he sold the farm in sec. 4, T. 1, R. 3 to Ed. Hawkes. Dunbar's reason for selling is probably to be found in the following story from the *Fairbury Gazette* of May 27, 1876: "The case of Dunbar who was sometime since indicted for manslaughter and whose trial it was expected would be had this term took a rather sudden and unlooked for turn. Since the shooting occurred John Dunbar has taken a lively interest in behalf of his brother, for which he certainly should be commended. He employed as counsel Messrs. E. E. Brown of Lincoln, Griggs & Ashby of Beatrice, Saxon, Slocumb & Hambel of this place, as strong an array of legal talent as was probably ever engaged in this county...." Legal service of that caliber required considerable cash.

Eldridge, E. E. Proprietor of a Fairbury hardware store, according to an advertisement in the *Fairbury Gazette*, Jan. 8, 1876.

Friend, William R. Near neighbor of Hawkes. Entered upon land in sec. 4, T. 1, R. 3, Mar. 13, 1875.

Gardner, Isaac S. Settled on Cub Creek in 1868 and later moved to Fairbury. Dawson, *Pioneer Tales*, 426.

George. See Bishop, George.

Goldsberry, Samuel M[ilton?]. Entered upon land in sec. 4, T. 1, R. 3, July 18, 1867. This was "Milt's place." This spelling of the name is from the Land Office Records. A warranty deed to John J. Dunbar on file in the Jefferson County Register of Deeds Office gives the name as *Goldesberry*.

Graves, Wm. Unidentified.

Hank. See Cites, Henry.

Hansell, George. Homesteaded land in sec. 2, T. 1, R. 2. The entry was made Sept. 27, 1876.

Harbine, Thomas. "The Colonel," a prominent citizen, financier, and promoter in Fairbury. Established a bank there in 1874 upon his arrival from St. Joseph, Missouri, where he had had a successful career as a politician and an official of the St. Joseph and Denver City Railroad. Andreas, "Jefferson County," 998; Dawson, *Pioneer Tales*, 425.

Henneberry, Michael. Settled on section 13, Fairbury precinct, east of present city of Fairbury, prior to 1870. Dawson, *Pioneer Tales*, 363.

Higgins, James (Jim). Son of Michael Higgins.

Higgins, John (Jack). Son of Michael and probably husband of Katherine (Kate). *See* Katherine.

Higgins, Michael (Mike). Homesteaded in sec. 14, T. 1, R. 2 in May 1869. Eventually engaged in the contracting business. Dawson, *Pioneer Tales*, 403.

Higgins, Mrs. Annie O'Neal. Mrs. Michael Higgins.

Hill, E. H. Unidentified. Apparently resided at Beatrice.

Hollenbeck, John G. Homesteaded in sec. 14, T. 1, R. 3, Sept. 16, 1874. A charter member of Mount Vernon Grange, he was soon "honored" by his fellow members. *Fairbury Gazette*, Jan. 15, 1876. On Jan. 1, 1875 he was granted a county teacher's certificate and immediately began to teach in District 7. At this time he was 28 years old. County Superintendent's Office, Record of Examinations of Teachers. He probably was the same John Hollenbeck who, after about a year's absence from the State, was nominated by the Greenback Party for the State legislature in September 1878. *Fairbury Gazette*, Sept. 28, 1878.

Hoppe, Frederick, Louise (Mrs. Frederick), and a brother, Anton, natives of Germany. Settled in 1866 on Rose Creek near the mouth of Dry Branch on sec. 12, T. 1, R. 2[?]. Dawson, *Pioneer Tales*, 395–398.

Howe, Church. From Douglas County. In 1876 Master of the State Grange. A widely known "insurgent" Howe was a State senator in 1885 and was defeated for Congress in 1886. J. Sterling Morton, *Illustrated History of Nebraska* (Lincoln, J. North & Co., 1913), 3:140, 212, 216.

Hughes. Not positively identified but probably either John G. or William Hughes both of whom entered upon land in T. 1, R. 3, on Apr. 20, 1866, the former in sec. 14, the latter in sec. 10.

Hulbert, Martha (Mrs. M. C.) Settled on Cub Creek in 1869. Dawson, *Pioneer Tales*, 418.

J. G. H. See Hollenbeck, John G., and Hughes, John G.

J. J. Not positively identified. Possibly John G. James.

James, Isaac Grant. Unidentified.

James, John G. Dawson, *Pioneer Tales*, 322, says James settled at North Steele City in 1863. The Land Office Records show that he entered upon land in sec. 11 and 14, T. 1, R. 3, Apr. 20, 1866.

Jamieson. See McCreight, Jamieson.

Jenkins, D. C. Emigrated from Illinois in 1859 and maintained a ranch and station on the overland trail in Jefferson County until 1867. Thereafter, until 1871 he published *The Little Blue* in the settlement which came to be known as Jenkins Mills. In the 70s he engaged in farming and mercantile activities in the county which he also served in various official capacities. Andreas, "Jefferson County," 999; Dawson, *Pioneer Tales*, 394. Entered upon land in sec. 11 and 13, T. 1, R. 3, Sept. 20, 1866 and June 5, 1867.

Jack. See Higgins, John.

Jim. See Bedy.

Joe (Jo). See Campbell, Joseph; *and* McCord Joseph.

Jule (Julius). See McCanless, Julius.

Justiss. Unidentified.

Katherine (Kate). Not positively identified. Apparently someone closely associated with the Higgins family. Probably wife or sister of John Higgins. Both conjectures are in disagreement with Dawson, *Pioneer Tales*, 403, who implies that none of the Higgins boys

could have been over 14 or 15 years of age in 1876–77, and who lists no daughters of Michael.

Kay, Lawrence. In 1876 he purchased land in sec. 8, T. 1, R. 3, from Elizabeth and H. C. Dawson. Judging from newspaper accounts Kay was not, however, a newcomer to the region at this time. He seems to have earned a reputation as a "mountaineer" and "miner" and was apparently not without means. *Fairbury Gazette*, Jan. 29, Feb. 19, 1876.

Kelly, O[liver]. Entered upon land in sec. 34, T. 2, R. 3, July 27, 1870. The father of Charles Kelly, Endicott, Nebraska, who now lives in the house built by Ed Hawkes and in which Hawkes ended his life. Interview, July 29, 1946.

Kennedy. Of Kennedy and Turner, general store, Fairbury.

Kindler. Unidentified.

Kinnaman, A. M. Prominent physician of Fairbury who opened his practice there late in 1875 or early in 1876 with offices over Bailey's drug store. *Fairbury Gazette*, Apr. 29, 1876.

Knoble. *See* Noble.

Lambert. Unidentified.

Letton, W. H. Emigrated from Scotland in 1869 and homesteaded north of Fairbury. Dawson, *Pioneer Tales*, 405. In 1874 he was established in Fairbury as a "merchant tailor" and in 1877 advertised as a distributor of sewing machines. *Fairbury Gazette*, Apr. 14, 1877. The father of Charles B. Letton who became judge of the State supreme court.

Lide. Unidentified.

Liz. *See* Smith, William and Elizabeth (Middleton); and McCanless, Elizabeth.

MacDougall. Unidentified. Apparently not a Jefferson County resident.

Martha. *See* McCanless, Martha McCreight.

Martin, Milt. Unidentified.

Mattingly, Joel. Son of James B. Mattingly who had settled in the region as early as 1858 or 1859 and engaged in freighting from the Missouri River to the Rockies. Joel and his father entered upon land in sec. 15, T. 2, R. 2, in Fairbury where they had located in 1865 or 1866. J. B. Mattingly, active in the founding of Fairbury, 1869–72 (Dawson, *Pioneer Tales*, 383), was apparently associated in 1881–82 with Ed Hawkes and the Lincoln Land Company in the founding of Endicott.

McCanless (Family). Probably no other single name in Jefferson County history has figured so prominently in the tales of the West which have come down to us. Few persons, if any, appear more frequently in Hawkes' diaries than do the various members of the McCanless clan. David Colbert McCanless, notorious founder of the family in Nebraska and operator of the famous Rock Creek Station on the overland trail, in 1861 precipitated a quarrel in which he was killed by the then unknown "Wild Bill" Hickok. Following the death of David, his widow Mary, with their children, William Monroe, Julius, Clingman, Elizabeth, and Charles, moved to land in sec. 3 and 10, T. 1, R. 3, which had been entered upon in 1860 by James L. McCanless, brother of David who had left the region about the time of the latter's death. During 1876–77, apparently all of the children, except the oldest, William Monroe (age 27 years), were farming that property with their mother. The title appeared in the names of Elizabeth and Charles.

McCanless, Charles. *See* McCanless (Family).

McCanless, Clingman. *See* McCanless (Family).

McCanless, Elizabeth. *See* McCanless (Family).

McCanless, Julius. *See* McCanless (Family).

McCanless, Martha McCreight. Mrs. William Monroe McCanless.

McCanless, William Monroe. Monroe, or "Mon," the oldest of the McCanless family, was born about 1849. In 1876–77 he was apparently living and farming on land in sec. 4, T. 1, R. 3, which he settled on in 1870 (Andreas, "Jefferson County," 1001) and entered upon May 20, 1872. Married Martha, daughter of Jamieson McCreight in 1870.

McCord, Joseph D. (Joe). Came to Jefferson County in 1869 at the age of 21. Dawson, *Pioneer Tales*, 419. On July 6, 1869, he entered upon land in sec. 11, T. 1, R. 2.

McCord, Thomas H. Father of Joseph who followed his son to Jefferson County a year after the latter had settled there. Purchased a farm near site of the present Endicott. Dawson, *Pioneer Tales*, 419.

McCord, "West." Probably Thomas W[esley?] McCord. Younger brother of Joseph, who in March 1876 completed the "second term ever taught in District 46" school under the name of Wesley McCord. *Fairbury Gazette*, Mar. 18, 1876. If this is correct "West" may have been living with Joseph since his father's home was presumably in District 7.

McCreight, Jamieson. Dawson, *Pioneer Tales*, 405–406, gives the name as "Joseph." According to Frank Wells of Fairbury in a personal interview on July 29, 1946, the "Jamieson" referred to in the diaries was McCreight, father of Martha McCreight (Mrs. William Monroe) McCanless. In view of the many known inaccuracies of Dawson who says that McCreight "moved to Jefferson county, Nebraska, in the year 1831," I prefer Wells' statement although both names may be correct, i.e., Joseph Jamieson or vice versa. According to Dawson, McCreight "homesteaded" just south of the present site of Endicott. Land Office Records at my disposal do not verify this. McCreight may, however, have purchased land somewhere in that vicinity.

McNair, Thomas J. Entered upon land in sec. 12, T. 1, R. 3, Jan. 14, 1870, and purchased land in sec. 32, from J. H. Shippee, in February of 1876. *Fairbury Gazette*, Feb. 5, 1876.

Mendum, J. P. Unidentified. Probably not a resident of Jefferson County.

Merrill, H. D. Entered upon land in sec. 1 and 11, T. 1, R. 3, and sec. 18, T. 1, R. 4, in 1869 when he first settled in Nebraska. Engaged in the general merchandising business at Jenkins Mills until August 1872 when he moved it to Fairbury. Remained in business there until 1881 when he sold out and turned his attention to stock raising. Andreas, "Jefferson County," 999.

Middleton. Either George of Emerit, Missouri, or Charles of New Windsor, Colorado, brothers of Elizabeth Middleton Smith. Jefferson County Court, Petition of George Middleton . . . August 3, 1907.

Milt. See Goldsberry, Samuel M[ilton]. *See also* Martin, Milt.

Mitcham, John. Entered upon land in sec. 7, T. 1, R. 3, Apr. 20, 1868.

Mollie. See Shippee, Mollie Cook.

Monroe (Mon). See McCanless, William Monroe.

Noble, William A. Unidentified.

Parkhurst, Spencer, and Rachael Layton. Entered upon land in sec. 2, T. 1, R. 3, Dec. 4, 1873. The Parkhursts had, however, been in the county for several years prior to that date. They were married by County Judge Ryburn in 1870 (Dawson, *Pioneer Tales*, 282).

Partlow, Simon S. Entered upon land in sec. 18, T. 1, R. 4, on Feb. 28, 1870. Resided half a mile east of Steele City and also had a farm on Indian Creek. Partlow engaged in stock raising but in 1880 was described as devoting "a portion of his time to science as well as agriculture and runs a blacksmith and wagon shop in town [Steele City]." *Fairbury Gazette*, Oct. 2, 1880.

Pete. See Tondre, Peter.

Phoenix, Franklin K. Unidentified.

Rachael. See Parkhurst, Spencer, and Rachael Layton.

Reed. Unidentified.

Riley. Probably William Riley, Fairbury blacksmith. *Fairbury Directory . . . 1874*, reprinted in Dawson, *Pioneer Tales*, 338–339.

Roode, A. R. Settled in Jefferson County on or before Aug. 27, 1873 when he entered upon land in sec. 12, T. 1, R. 3.

Saxon, John. Established in law practice in Fairbury as early as 1874. *Fairbury Directory . . . 1874*, reprinted in Dawson, *Pioneer Tales*, 338–339. Active as an organizer of the Jefferson County National Greenback Party. Served as its chairman in 1878 and 1879. In the latter year, he was the State organization's candidate for judge of the supreme court. Published the *Fairbury Clipper* for an undetermined period, 1876–78. Dubbed "the Baron" by the *Fairbury Gazette* on whose press the *Clipper* was printed. Saxon's name appears frequently as a lecturer on lyceum programs and elsewhere.

Sheldon, A. J. " . . . Manufacturer and dealer harness, saddles, collars, whips, curry combs, brushes, etc. North side of the square." Advertisement in *Fairbury Gazette*, Jan. 15, 1876.

Shippee, James H. Entered upon land in sec. 32, T. 1, R. 3, due south of Hawkes, on Dec. 24, 1869. Early in 1876 Shippee sold half of his 160 acres to Thomas J. McNair. *Fairbury Gazette*, Feb. 5, 1876.

Shippee, Mollie (Cook). Wife of James H. Shippee.

Shobottom. See Shoebotham, Henry S.

Shoebotham, Henry S. Homesteaded in Jefferson County, north of Fairbury, in 1869. Dawson, *Pioneer Tales*, 439.

Slocumb, C. B. Settled at Fairbury in 1873 and attained prominence as an attorney, practicing with W. O. Hambel in the firm Slocumb and Hambel. As a member of the State legislature in 1878, he was author of the famous Slocumb Liquor Law. Andreas, "Jefferson County," 999.

Smith. Of Buchanan and Smith, grain dealers. *Fairbury Directory . . . 1874*, reprinted in Dawson, *Pioneer Tales*, 338–339.

Smith, William and Elizabeth (Middleton). "Uncle Billy" and "Liz" Smith settled in Nebraska sometime between 1860 and 1864 (see Introduction), making the journey from Illinois with Hawkes. It is probably also true that the three had made the trip from their native England together about 1850. The relationship of the Smiths to Hawkes is not clear. Andreas, "Jefferson County," 1000, says that the latter "Had a friend who came with him." Dawson, *Pioneer Tales*, 384, tells it this way: "In the year 1862, Smith and his wife, accompanied by Hawkes, then but a mere lad . . . ." and then goes on to say that Smith lived until 1900. Almost all of Dawson's account must be discredited, e.g. Smith died July 22, 1895 (*Fairbury Gazatte*, July 27, 1895), and there is adequate evidence that Hawkes was no "mere lad" in 1864. "Liz," sole heir to the property of Smith and Hawkes, outlived both men, dying on Aug. 4, 1907 at the age of about 72.

Stors. Unidentified.

Susan. Probably Susan McCord, daughter of Thomas H., and sister of Joseph.

Susan B. Unidentified.

Theodore (Theo). See Crites, Theodore.

Tondre, Peter J. Fairbury saloon keeper, implement and stock dealer, according to advertisements and accounts in various newspapers of the period.

Turner, Ben. Fairbury blacksmith.

Turner & Kennedy. Correctly Kennedy & Turner, general store, *which see.*

Uncle Bill. See Smith, William.

Voss, Bill. Settled in Jefferson County on or before June 20, 1868 when he entered upon land in sec. 22 and 23, T. 2, R. 3.

Warden, T. F. Unidentified.

Warren, M. Loan agent, attorney, and collector who established himself at Fairbury in 1871 after a suc-

cessful legal and political career in Ohio. Andreas, "Jefferson County," 1000.

Wells, Aaron. Settled on Coon Creek south of Hawkes' place in 1869, entering upon sec. 32, T. 2, R. 3, on Feb. 23, 1870.

Wells, Frank. Son of James A. Wells who with his family emigrated to Jefferson County prior to June 1869 (Dawson, *Pioneer Tales*, 444, says 1867) when he homesteaded at the mouth of Coon Creek in sec. 10 and 15, T. 1, R. 3. Not to be confused with the Frank Wells now in retirement at Fairbury after many years of public service as a member of the Nebraska State Legislature.

Wells, George. Probably a brother or son of Aaron Wells.

"Widow." Unidentified. The "Widow" may refer to Mary (Mrs. David C.) McCanless; to Charity Crites; or to one Jerusha Graham, about whom I have been unable to find any information except that she entered upon land adjoining Hawkes in sec. 5, T. 1, R. 3, on Nov. 11, 1868. May also refer to one Ann Hughes, "widow of Edward Hughes," who, according to the Land Office Records, proved up on land originally homesteaded by her husband in sec. 11, T. 1, R. 3, several miles east of Hawkes.

THE PASSING OF THE OLD RAIL FENCE: A FARMER'S LAMENT

EDMUND CODY BURNETT

Del Rio, Tennessee

The other day I read a piece in one of the papers that filled me with forebodings.* It was an account of a new invention, a wood-burning truck, and it was hailed as a great advance in motor transportation. That may all be true; and far be it from me to attempt to controvert it. A new-fangled device in transportation may, for aught I know, be a good thing for all and sundry, even for the farmer. That phase of the matter, however, fails to stir the least enthusiasm in my bosom. What I, as a real dirt farmer, am chiefly concerned about are those things that more intimately and deeply affect our lives.

Now, I have no quarrel with wood-burning trucks in the abstract (or on the concrete, for that matter!). It is a somewhat casual note in the newspaper story that startles me; for it is therein held forth as one of the advantages of the new wood-burning motor that, when the supply of fuel runs short on the road, it can be replenished, forsooth! from old rail fences. It is this remark (out of the side of the mouth, as it were), this minatory gesture toward old rail fences, that causes me to "view with alarm," as the politicians are wont to say, and even to "tremble for the consequences." We have too few old rail fences now. We ought to have more (and worse) old rail fences. The widespread adoption of wire instead of rails for the making of fences has already played havoc with farm life. It has gone far toward transforming the farmer, from a neighborly, sociable, reflecting person, into an unsympathetic, unprogressive, uncivil being, the clodhopper, the hayseed of urban gibe.

In the good old days, when the rail fence (mule-high, pig-tight, and bull-strong) reigned supreme on the farm, monarch of all who surveyed it, the farmer could take his secure (and fairly comfortable) seat on the top rail, watch the plowing and the sowing and the reaping, smoke his corncob pipe the while, and thoughtfully lay his plans for the future. When a neighbor came over (as neighbors often did), the two could sit on the fence, whittle a rail apiece, smoke a pipe apiece (and it was a real pipe o' peace, if you will permit me), hold delightful and unhurried discourse over their respective methods, tribulations, and successes, and eke indulge, if they liked, in amicable and mutually informing discussions of the political problems of the day. Or, if a stranger passed by (and strangers sometimes did), he could mount the fence (the panel adjoining that on which the farmer sat), rest his weary bones, and regale his fence-rail host with news and valuable intelligence from other and sometimes far-off communities. And, while the two were thus engaged in the exchange of knowledge, mayhap they also exchanged pipefuls, the stranger offering his host a fill of "Old Taylor's Twist," the farmer in turn inducing his guest to try a bit of "home-grown." And this beyond all doubt

*This paper was read at the annual meeting of the Agricultural History Society on May 6, 1931.

redounded to the promotion of that good fellowship without which this world would be a sorry place in which to live.

Was there ever a finer school for civic and political training than the old rail fence, that fertile generator of thought, that unsurpassed promoter of friendly converse and community of interests? After long and patient investigation and study, I am convinced there never was. As the farmer has been the backbone of our American civilization (and we are all agreed that American civilization is the salt that must save the world), so has the old rail fence been the core and center of the cultural life of the farm. To sit on an old rail fence, to smoke reflecting and content, to hold sweet converse there with neighbor and friend—this, once upon a time, was one of the few secure liberties which the farmer possessed. But alas! Where are those liberties today? Where is that communion of spirits that in the good old days made of farming such a satisfaction and a joy? As the old rail fence has disappeared, so have the farmer's liberties, his satisfactions, his joys—all, all vanished away.

What in reality is at the bottom of the farmer's woes today? Is it not a dearth of constructive thinking, a failure to adjust himself to the new conditions that compass him round about? But how can he think constructively or plan wisely if he has no old rail fence on which to sit and smoke his pipe and ponder?—that old rail fence that for generations stimulated and inspired his ancestors to thought and action. Men cannot sit upon a wire fence, be it barbed or woven; they cannot whittle it; neither can they by any other means known to scientist or philosopher draw inspiration therefrom.

Thank heaven there are a few old rail fences left; and it is on the top rails of these treasured remnants that yet, I fondly hope, will be born those immortal ideas, those far-reaching plans that shall save the farmer (if indeed there be any salvation for him) from an unmerited doom; yea, that shall preserve our civilization itself from the gehenna of desolation and decay. And shall we permit this new monster of the highway, this accursed wood-burning truck, to go raging through the land with fire and smoke, consuming the last vestiges of the rail fences which our fathers builded at the cost of so much toil and sweat and precious cuticle? Forbid it Heaven!

Oh! I could expand my theme and expound my gospel ad infinitum, as the poet says. In very truth I could a moral point of fences burned for stovewood by the wives of farmers themselves. Yea verily I could a thousand tales unfold of farmers "gone to seed," as the prophet (I forget his name) long ago so eloquently foretold; and all because of the neglect of their old rail fences. But I refrain. The farmers are troubled and hesitant, knowing not which way to turn. I come to bring them light and guidance. I will cry my warning from every housetop. (I would fain also make the welkin ring from every stump, but alas! good stumps, suitable for oratorical purposes, are now few and far between, and those that remain are no longer what they were once cracked up to be.) Hear, then, my solemn exhortation: SAVE THE OLD RAIL FENCES! For by them and them alone may the farmer come again into his own.

THE TERM "AGRICULTURAL REVOLUTION" AS USED BY ECONOMIC HISTORIANS

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"Revolution" and "evolution" are terms that the economic historian has borrowed from the natural and physical sciences to express the rate, degree, and nature of social change. In the terminology of modern history, "revolution" was first applied to the political uprisings of the eighteenth century, the "age of revolution," and was extended to the economic realm to emphasize the coordinate importance of the overthrow of the old regime in industry and business by changes which were assumed to be relatively sudden and complete.[1] The terms "commercial revolution" and

[1] Some writers of modern history apply the term to

"industrial revolution," if by no means always used coherently and consistently, have long since been incorporated into the working vocabulary of economists and historians and the complementing term, "agricultural (or agrarian) revolution," is coming to have almost as general an acceptance, with an assumption of a full understanding and agreement as to its scope and meaning. Such conventional labels are no doubt convenient and suggestive in relating and classifying stages of economic and social as well as political change, but unless applied with definiteness and specification, on the basis of supporting evidence, they become meaningless and confusing. The commercial and industrial designations are being subjected to increasing modification and qualification,[2] and it would seem no less desirable to appraise the validity of the agricultural before it is admitted to recognized good usage.

To begin with, there should be more precision in the use of the term itself. For instance the word "agrarian" has a particular meaning which no legitimate usage can make synonymous with "agricultural." Such concerted agitations may or may not involve changes in the occupation as a whole and may hasten or retard the other influences. Then, too, for this as for other revolutions, as seemingly we still need to be reminded, change does not necessarily involve social improvement, according to measurable standards. In the farming undertaking, as in other lines of enterprise and endeavor, progression, fast or slow, gives no assurance of "progress."

Whether or not reflecting class consciousness and whether progressive or retrogressive, the revolution, within a given country at least, should be identified with a particular era from the conditions of which, supposedly, the changes arose. Hence it is decidedly disconcerting for the investigator, as for the student and general reader, to find widely varying periods assigned as the time when the revolutionizing forces were demonstrably at work.

The influences attending the breaking up of the medieval manor, long-extending, halting, and uneven as they were, have been regarded by some writers as revolutionary.[3] Rowland E. Prothero (Lord Ernle), whose popular and informative history of English farming did much to establish the organization of the subject, dated the modernizing changes from the early eighteenth century through the first third of the nineteenth.[4] None the less, Frederick C. Dietz has shown conclusively that the foundations of scientific and mechanized agriculture were laid not earlier than the years, 1815–1850.[5]

For the United States, according to Edward C. Kirkland, the revolution in agriculture as in manufacturing was a direct importation from England, beginning in the late eighteenth century and well established by 1860.[6] Upon a back-

a wide variety of changes. Thus J. Salwyn Schapiro, *Modern and Contemporary European History* (Boston, 1918), in addition to the numerous political revolutions, distinguishes "intellectual," "industrial," "transportation," "communication," "agricultural," and "labor" revolutions. On the meaning and historical use of the term, see Sidney Hook in the Social Science Research Council's *Theory and Practice in Historical Study* (New York, 1946), 117; Russell A. Dixon and E. Kingman Eberhart, *Economics and Cultural Change* (New York, 1938), 309; Guy Stanton Ford, "Are Revolutions Necessary?" American Association of University Women, *Journal*, 28:131–136 (1935).

[2] For typical statements, see Preserved Smith, *The Enlightenment* (New York, 1935), 5–6; Laurence Bradford Packard, *The Commercial Revolution, 1400–1776* (New York, 1927), ch. 1; Herbert Heaton, "Industrial Revolution," *Encyclopaedia of the Social Sciences*, 8:3–12 (New York, 1932); John U. Nef, "The Industrial Revolution Reconsidered," *Journal of Economic History*, 3:1–31(1943); and Dixon and Eberhart, *Economics and Cultural Change*, 417. For the more conventional view, see N.S.B. Gras, *Industrial Evolution* (Cambridge, Mass., 1930), 90.

[3] The "glossary" of social science terms in Rexford G. Tugwell and Howard C. Hill, *Our Economic Society and Its Problems* (New York, 1934), 547, gives this dating: "Agricultural Revolution. The sweeping changes in the character and size of land holdings, and in methods of farm production, which occurred during the sixteenth and seventeenth centuries." The *Encyclopaedia Britannica* (Chicago, 1946), 1:384, is even more sweeping in chronology: "Agricultural Revolution, A term indicating that period in history which witnessed the transition in methods of farming from medieval to modern conditions."

[4] Lord Ernle, *English Farming, Past and Present* (ed. 5, edited by Sir A. D. Hall, London, 1936), especially ch. 7–11. The first edition appeared in 1912 and was an elaboration of preliminary sketches written in the 1880s. See also Ernle, "The Agricultural Revolution in England," *Encyclopaedia of the Social Sciences*, 1:577–581 (New York, 1930).

[5] Frederick C. Dietz, *An Economic History of England* (New York, 1942), 402–403.

[6] Edward C. Kirkland, *A History of American Economic Life* (rev. ed., New York, 1939), 186–204. *Cf.* Raymond G. Taylor, "The Importance of the Agricul-

ground of intensive regional studies, Percy W. Bidwell placed "the Agricultural Revolution in New England" in "the half-century before the Civil War."[7] Thomas Nixon Carver discovered the definite beginnings of modernized farming in the United States in the "period of transformation, 1833–1866," which provided the impetus for all later changes.[8] With still more restricted dating, William J. Trimble isolated "The Beginnings of the Industrial Revolution in American Agriculture" in the years, 1839–1841.[9]

However, in the judgment of most writers on the subject, the influences that revolutionized the American countryside were generated in that most available if not always exact period of division in American history, the Civil War. Out of the issues of the political struggle, it is held, came the impetus and direction of the new economic and social forces on the farm and in the country community, no less than in the factory and the city. Arnold Tilden staked his dissertation on the assertion that "the Agricultural Revolution was the result of the Civil War" and that it was completed by 1890.[10] A major phase of the Beards' "second American revolution" was the "triple revolution in agriculture," each line of which had contributed its part to the making of the new economy by 1900.[11] Harold Underwood Faulkner's "agrarian revolution" is dated definitely and confidently as "the half century from 1860 to 1910."[12] Louis Bernard Schmidt, who was the first to give a precise definition of the term and to attempt an integration of the various factors involved, placed the determining changes between the Civil War and the first World War, with elaborating and accelerating changes during and following the latter struggle.[13]

But in the opinion of later writers new and bigger revolutions were on the way—in fact, to them, *the* revolution. In the Middle West according to the interesting if considerably involved analysis of Joseph B. Ross, changes of revolutionary proportion did not appear until after 1890, and they did not reach problem size until twenty years later.[14] In 1916 Carl Vrooman, then Assistant Secretary of Agriculture, wrote with assurance, both as reporter and prophet: "As a result of recent scientific and economic developments along agricultural lines, we are today in the midst of an agricultural revolution that seems destined to be as significant and as far-reaching in its effects upon civilization as was the industrial revolution of the eighteenth and nineteenth centuries. In the light of these developments, agriculture appears not only as the youngest of the sciences, but also as the most important."[15] Two years later a recognized authority on the economics of agriculture, E. G. Nourse, also described an existing "revolution in farming."[16]

In the two decades between the World Wars fact-finding and interpreting surveys indicated rural social, mechanical, and financial adjustments and disruptions, for good or bad, that, in comparison with previous changes so designated, might properly be classed as revolutionary.[17]

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tural Revolution," *History Teachers' Magazine*, 8:343–344 (1917).

[7] "The Agricultural Revolution in New England," *American Historical Review*, 26:683–702 (1921).

[8] Thomas Nixon Carver, *Principles of Rural Economics* (Boston, 1911), 84–92. In Percy W. Bidwell and John I. Falconer, *History of Agriculture in the Northern United States, 1620–1860* (Washington, 1925), 4, Falconer designated the 1840s and 1850s as "the period of transformation." See also for the same general dating, George Matthews Modlin and Frank Trever de Vyver, *Development of Economic Society* (Boston, 1936), 202–207.

[9] North Dakota Agricultural College, *College and State*, 1:1–5 (Fargo, 1917).

[10] *The Legislation of the Civil-War Period Considered as a Basis of the Agricultural Revolution in the United States* (Los Angeles, 1937), 60, 109.

[11] Charles A. and Mary R. Beard, *The Rise of American Civilization* (New York, 1927), 2:254–284.

[12] *American Economic History* (ed. 5, New York, 1943), 375–400.

[13] "Some Significant Aspects of the Agrarian Revolution in the United States," *Iowa Journal of History and Politics*, 18:371–395 (1920), and "The Agricultural Revolution in the United States, 1860–1930," *Science*, 72:585-594(1930).

[14] "The Agrarian Revolution in the Middle West," *North American Review*, 190:376–391(1909), and "Agrarian Changes in the Middle West," *Political Science Quarterly*, 25:625–637(1910).

[15] "The Agricultural Revolution," *Century Magazine*, 93:111–123(1916).

[16] "The Revolution in Farming," *Yale Review*, 8:90–105(1918).

[17] Conference on Unemployment, Washington, D. C., 1921, *Recent Economic Changes in the United States* (New York, 1929), 2:547–602; President's Research Committee on Social Trends, *Recent Social Trends in the United States* (New York, 1933), 1:90–121, 497–552; and the annual surveys edited by W. F. Ogburn, entitled "Social Changes," in *American Journal of So-*

Even more determining for farming and rural life have been recent developments in technology and social organization achieved largely through State and Federal research and extension agencies and recorded most informingly in their yearbooks and bulletins.[18] Popular writers, for their part, have not failed to exploit the more dramatic features of plant and animal breeding, new insecticides and fertilizers, and such mechanical wonders as the general-purpose tractor with rubber tires, the perfecting combine, and corn and cotton pickers.[19]

It appears, then, that our "revolution," if so it can be called, is a continuing one that, thus far, has developed through several fairly distinct stages. Economic historians are coming to distinguish, not one, but a series of industrial revolutions, the first marked by the establishment of the factory system; the second, since the 1850s, during which new power agencies and technical processes were added; and the third, since about 1918, when the techniques and organization of "mass production" have appeared.[20] Essentially parallel stages in agricultural development, somewhat more retarded in the first, indicate rates, degrees, and kinds of change which must be distinguished if we are to be measurably realistic.[21]

No less confusing than the lack of agreement as to the time of the revolution is the variety of changes emphasized by different writers. For England Lord Ernle and writers who have followed his lead have divided attention between the new systems of cultivation and stock breeding and the enclosure of the commons.[22] Carver and Trimble stressed the new machinery for the pre-Civil War "transformation,"[23] as others have featured intensified mechanization for recent times. For Holland Thompson, indeed, the introduction of machine processes was the essence of the revolution.[24] The Beardian "triple revolution" was found in the breaking up of the plantation, the passing of the frontier, and the commercializing of the undertaking.[25] Vrooman beheld revolutionizing business methods in cooperative marketing as encouraged by the United States Department of Agriculture and the State extension services.[26] Nourse, in a broader way, saw agriculture changing rapidly to the status of big business.[27] Faulkner, eclectically, has combined technical and business changes with organized agitation and governmental activity.[28] During the 1930s enthusiasts in "agrobiology" and "chemurgy" visioned, as already under way or definitely projected, revolutionary achievements in intensified cultivation and in industrial utilization.[29]

ciology, vols. 34–40 (1927–1934). In one of these surveys Bruce L. Melvin asserted that "the year 1930 is likely to stand unique in the annals of rural change because it was marked by events of a cataclysmic nature and by the merging of tendencies noticeable for previous years." *Ibid.*, 36:985(1931).

[18] See especially U. S. Dept. of Agriculture, *Yearbook*, 1940; U. S. Dept. of Agriculture, Interbureau Committee, *Technology on the Farm* (Washington, 1940); Sherman E. Johnson, *Changes in Farming in War and Peace* (U. S. Bureau of Agricultural Economics, Washington, 1946). *Cf.* statement of an official of the Dept. of Agriculture quoted in N. S. B. Gras, *A History of Agriculture in Europe and America* (ed. 2, New York, 1940), 461–465.

[19] For typical examples, see Paul de Kruif, *Hunger Fighters* (New York, 1928); W. B. Thornton, "The Revolution by Farm Machinery," *World's Work*, 6:3766–3779(1903); Oliver Carlson, "The Revolution in Cotton," *American Mercury*, 34:129–136(1935); John Dos Passos, "Three Hundred Acres and a Tractor," *Harper's Magazine*, 188:538–547(1944); Homer Croy, "You Wouldn't Know the Old Farm Now," *ibid.*, 193:306–312(1946); James H. Street, "The Tractor Revolution," *Atlantic Monthly*, 177:111–115 (1946).

[20] Melvin M. Knight, Harry Elmer Barnes, Felix Flugel, *Economic History of Europe* (Boston, 1928), 368–376; Harry Elmer Barnes, *An Economic History of the Western World* (New York, 1937), 445–446; Carlton J. H. Hayes, *A Political and Cultural History of Modern Europe* (New York, 1936), 2:19–35.

[21] In Lynn Thorndike, *A Short History of Civilization* (New York, 1926), 484, the introduction of harvesting machines is termed the "second stage" in the agricultural revolution.

[22] Ernle, *English Farming, Past and Present*, ch. 7–11; Schapiro, *Modern and Contemporary European History*, 53.

[23] See the citations in footnotes 8 and 9.

[24] Holland Thompson, *The Age of Invention* (New Haven, 1921), 110–127.

[25] *The Rise of American Civilization*, 2:254–284.

[26] Vrooman, "The Agricultural Revolution."

[27] Nourse, "The Revolution in Farming."

[28] Faulkner, *American Economic History*, 375–400.

[29] Typical of such writings are Edward Sherwood Mead and Bernhard Ostrolenk, *Harvey Baum, A Study of the Agricultural Revolution* (New York, 1928); William J. Hale, *The Farm Chemurgic* (Boston, 1934); O. W. Willcox, *Reshaping Agriculture* (New York, 1934), and *Nations Can Live at Home* (New York, 1935); E. H. Ries, "The Revolution in Agriculture," *Dynamic America*, 10:5–7, 19(1940).

Regional studies have varied with the dominant interest of the area or of the writer. Bidwell's New England revolution involved the specialization of function attending the introduction of the factory system.[30] For the Middle West, Joseph B. Ross considered the growth of tenancy clearly revolutionary,[31] as Joseph Schafer did the specialization of dairying in Wisconsin.[32] On the basis of very doubtful or inadequate facts, a current British reporter on "the Midwest" has thought the term to mean the settlement of the prairies by New Englanders.[33]

It should be clearly noted that students who have dealt most fully with the history of the changes in themselves and not merely incidentally in connection with other more direct concerns have not resorted to this loose and indefinite usage. On the contrary they have sought to define and delimit the term, "revolution," and have made systematic factual analysis and reasoned evaluation of the elements involved.[34] Such contributions to information and organization are real and definite. The issues that they raise are as to the relative time and extent of the changes. In short, recognizing, as we must, the extent and significance of these transformations that have taken place in the American countryside, especially during the past two generations, the question remains whether, in the true meaning of the word, the changes may be classed as revolutionary. Extending research in the relatively unexplored realms of agricultural history is demonstrating conclusively that the basic changes in farming, as in manufacturing and commerce, have been gradual and prolonged rather than sudden and immediate. Again, to use the borrowed terms, they have been "evolutionary" rather than "revolutionary."

In land settlement and tenure, whether in the decline of serfdom, the enclosure of the English commons, the break up of the plantation, the "passing" of the frontier, or the growth of tenancy, the changes were certainly not sudden or catastrophic. The replacement of the plantation system was more of a dissolution or, in some cases, devolution than a revolution.[35] In spite of the accelerating forces in the latter stages, the frontier had and still has a remarkable persistence. The much-quoted report of the Superintendent of the Census in 1890 did not mean that the area of unexploited farm lands was exhausted, as it was not ten years later, the point at which the Beards put up the bars. There were many cut-over and stray passed-over stretches; and the systematic invasion of the desert by irrigation and dry farming was still to come, with new types of economic and social frontiers. Meanwhile there were periodical recessions of the main frontier, along with much back-trailing to the East and South.[36]

There is always the temptation, on the farm as in the factory, to give exaggerated dramatization to the coming of the machine. Too often the story begins with the denouement of the successful invention, with little attention to the long and painful experiences of trial and error that have led to the achievement. The assumption commonly made, by implication at least, that as soon as new machines and mechanical processes have been made workable they have been generally utilized, disregards the delaying influences of operative inexperience, inertial prejudice, and special regional difficulties in adaptation. Adoption in certain areas, under exceptionally favorable conditions, has

[30] "The Agricultural Revolution in New England."

[31] Ross, "The Agrarian Revolution in the Middle West," and "Agrarian Changes in the Middle West."

[32] Joseph Schafer, *A History of Agriculture in Wisconsin* (Madison, 1922), 149–164.

[33] Graham Hutton, *Midwest at Noon* (Chicago, 1946), 62–63.

[34] Schmidt, "The Agricultural Revolution in the United States, 1860–1930"; Everett E. Edwards, "American Agriculture—the First 300 Years," U. S. Dept. of Agriculture, *Yearbook*, 1940, p. 221–266.

[35] Everett E. Edwards, "Historical Background of the Present Situation in Southern Agriculture," Southeastern Economic Association, *Proceedings*, 3:78–93 (1930); Charles W. Ramsdell, "The Natural Limits of Slavery Expansion," *Mississippi Valley Historical Review*, 16:151–171(1929); Robert Preston Brooks, *The Agrarian Revolution in Georgia, 1865–1912* (Madison, Wis., 1914); Oscar Zeichner, "The Transition from Slave to Free Agricultural Labor in the Southern States," *Agricultural History*, 13:22–32(1939); B. I. Wiley, "Salient Changes in Southern Agriculture Since the Civil War," *ibid.*, 65–76. Ulrich B. Phillips, who termed the change a "revolution imposed from without," showed none the less "a home-grown industrial reorganization achieved painfully and piecemeal." See his article, "Plantations with Slave Labor and Free," *American Historical Review*, 30:748–753(1925).

[36] Fred A. Shannon, "The Homestead and the Labor Surplus," *American Historical Review*, 41:638–639 (1936); Everett Dick, "Going Beyond the Ninety-Fifth Meridian," *Agricultural History*, 17:105–112 (1943); Charles O. Paullin, *Atlas of the Historical Geography of the United States* (Washington, 1932), plates 76–79.

too frequently been confused with general utilization.[37] The influence, too, of accelerating stimuli such as wars has generally been overemphasized.[38]

Most retarded and slow moving of all the changes have been those involving the effective application of the new and extended findings of the scientists. The years from Antoine Laurent Lavoisier, Humphry Davy, Comte de Buffon, and Carolus Linnaeus to Justus von Liebig, Jean-Baptiste Boussingault, James F. W. Johnston, John Bennet Lawes, and Joseph Henry Gilbert involved as great a range in scientific thinking as that from Jethro Tull, Arthur Young, Albrecht Thaer, and Elkanah Watson to Andrew Jackson Downing, John Pitkin Norton, S. W. Johnson, Francis Humphreys Storer, and E. W. Hilgard did in scientific practices. Still more striking was the contrast between the work of these mid-century pioneers and that of modern investigators. Each generation felt its superiority over the former; the "then and now" theme remained a perennial topic of farmers' institutes.

Still with all the "new knowledge" and improved techniques determining alterations were distressingly slow. There was not only the task of spreading the gospel of better farming but no little disagreement as to its fundamental tenets. A speaker before an Ohio fair in 1860 confessed frankly that "Every question of the science and practice of Agriculture. . .is in doubt and uncertainty. . . ."[39] Six years later in his address before the American Institute, Horace Greeley gave the devastating judgment: "Our agriculture is yet rudimental—I might say semi-barbarous."[40] For the next two decades there was the continuing lament at the lack of scientific applications in other realms of the occupation comparable to those in the mechanical.[41]

The agricultural colleges, the experiment stations, and the research work of the United States Department of Agriculture only gradually made available verified principles and practices.[42] For many years the gulf between the laboratory and experimental plot and the family-size farm was wide, and it was bridged with difficulty and careful deliberation. For instance ten years after the founding of federal-aided experiment stations an agricultural journalist could make this sardonic observation of a major branch of the industry:

[37] For general surveys and conclusions, see Bidwell and Falconer, *History of Agriculture in the Northern United States*, 281–305; Leo Rogin, *The Introduction of Farm Machinery* (Berkeley, Calif., 1931); Harold Barger and Hans H. Landsberg, *American Agriculture, 1899–1939* (New York, 1942), 194–199. For the history of the drill, see Russell H. Anderson, "Grain Drills Through Thirty-Nine Centuries," *Agricultural History*, 10:157–205(1936). The very gradual adaptation and general utilization of farm machinery and the long-continuing place of hand tools is shown by the descriptions in such contemporary compendiums as Charles L. Flint's article on agriculture in *Eighty Years Progress of the United States* (New York, 1861), 1:26-37; Cuthbert W. Johnson, *The Farmer's and Planter's Encyclopaedia of Rural Affairs* (rev. ed., Philadelphia 1869); *The Great Industries of the United States* (Hartford and Chicago, 1872), 122–147, 332–348, 693–698. Reports of State and regional agricultural societies give specific confirmation of these summaries. New England and the South were especially slow in mechanization, and many areas of the Middle Atlantic States were not much more advanced.

[38] For the Civil War and the following period, see Rogin, *The Introduction of Farm Machinery*, 91–125. For conditions in one of the leading States in mechanization in the post-war years, see the Iowa State Agricultural Society, *Report*, 1867, p. 213–267. Some of the most significant developments in labor-saving devices, as the self-binder, the combine, etc., came in the period following the war. For the mechanical advances between the World Wars, see *Technology on the Farm*, and Works Progress Administration, National Research Project on Reemployment opportunities. . . , *Studies of Changing Techniques and Employment in Agriculture* (Philadelphia and Washington, 1937–1941).

[39] Ohio State Board of Agriculture, *Report*, 1860, p. 455.

[40] *New York Semi-Weekly Tribune*, Mar. 9, 1866. See his more deliberate statement to the same effect in A. J. Johnson, *New Universal Cyclopedia* (New York, 1877), 1:60. The opinions in the reports of the United States Commissioners of Agriculture in the 1870s are no less disparaging.

[41] Michigan State Board of Agriculture, *Report*, 1874, p. 64; U. S. Commissioner of Agriculture, *Report*, 1874, p. 280–294. A revealing evidence of the advance in agricultural knowledge in a quarter century is found in a comparison of Jonathan Periam's *The American Encyclopaedia of Agriculture* (Chicago, 1881) with L. H. Bailey's *Cyclopedia of American Agriculture* (4 vols., New York, 1907).

[42] Alfred C. True, *A History of Agricultural Education in the United States, 1785–1925* (Washington, 1929), and *A History of Agricultural Experimentation and Research in the United States* (Washington, 1937); Earle D. Ross, *Democracy's College* (Ames, Iowa, 1942), and "The United States Department of Agriculture During the Commissionership," *Agricultural History*, 20:129–143 (1946).

" 'If lightning should destroy one-third of the cows in any or all of the states in the union, it would be a financial blessing to the owners, provided the thunderbolt was directed intelligently, and by the use of the scale and Babcock test.' "[43]

Along with the gradual accumulation of available information, agencies for its dissemination evolved. As early as the 1820s fairs provided exhibitions of achievements and forums for the exchange of experiences.[44] These pioneer institutions were soon supplemented by an agricultural press[45] and by various State and Federal reports and statistical compendiums. From the 1870s farmers' institutes helped to prepare the way for the State-Federal extension service which was inagurated during the first World War. This service has been progressingly active in bringing the usable findings and programs of State and Federal agencies to the farmers and their families.[46]

Through the cumulative effect of these agencies of research and information the achievements of the past generation—more especially the last decade—in plant and animal breeding, the control or eradication of pests and diseases, the fuller mechanization of farm and home, the growth of facilities of transportation and communication, and the adaptation of rural educational, religious, and recreational institutions are remarkable—in some cases astounding.[47] Now, if ever, it might seem, with these impressive exhibits of technological transformations on the farm, we could conclude that the true revolution is going on.

The effective corrective to such a rash conclusion, if not afforded by past experiences, was given by two eminent British agricultural authorities on the eve of the global struggle: "At the present moment we seem to stand in the middle of a period of rapid accumulation of new knowledge, though, fifty years hence it may appear as though the nineteen-thirties marked only the beginning of the main period of development."[48]

This caution, justified throughout the course of modern industrialism, points the true function of the economic historian as being that of recording and describing for each real period, as fully and accurately as the evidence permits, conditions and changes "as they actually were," and, adjuring the appeal of dramatic and sensational presentation, leaving to inference the relative degree of change involved as well as the judgment as to whether the results might be considered as "progressive."

To perform this task effectively it is essential for the historian to join forces with the technician, the economist, the sociologist, and the political scientist. Such cooperation in ideas and methods of approach is needed to give accuracy and completeness; it is needed no less to give a proper sense of proportion. For the "agricultural historian" as a relatively newcomer, taking warning from certain over-pretentious assumptions of fellow workers in other fields of economic history, may do well to bear in mind that however "basic" his industry may be, it is, after all, but one interrelated branch of an emerging economic order.[49] Hence the more naturally and completely changes in this area are related to the performance of the general national economy, the more realistic and hence conclusive the findings will be.

[43] Quoted in the Iowa State Agricultural Society, *Report*, 1897, p. 561. On the slowness of the acceptance of new scientific ideas and methods, see Isaac Phillips Roberts, *Autobiography of a Farm Boy* (Albany, 1916), 247–251; and Paul H. Johnstone, "Old Ideals versus New Ideas in Farm Life," U. S. Dept. of Agriculture, *Yearbook*, 1940, p. 111–170.

[44] Wayne Caldwell Neely, *The Agricultural Fair* (New York, 1935).

[45] Albert Lowther Demaree, *The American Agricultural Press, 1819–1860* (New York, 1941).

[46] Alfred C. True, *A History of Agricultural Extension Work in the United States, 1783–1923* (Washington, 1928); Joseph C. Bailey, *Seaman A. Knapp, Schoolmaster of American Agriculture* (New York, 1945).

[47] For summaries of technical and social achievements, see *Technology on the Farm*, and E. D. Sanderson, *Rural Sociology and Rural Social Organization* (New York, 1942).

[48] *British Agriculture; The Principles of Future Policy; A Report. . .*by Viscount Astor and B. Seebohm Rowntree (London, 1938), 404.

[49] *Cf.* Louis Bernard Schmidt, "The Economic History of American Agriculture as a Field for Study," *Mississippi Valley Historical Review*, 3:48–49 (1916); Charles A. Beard, "Agriculture in the Nation's Economy," *Nation*, 125:150–151 (1927); L. H. Bean, "Agriculture and the Nation's Business," *Journal of Farm Economics*, 9:340 (1927); Joseph S. Davis, "Agricultural Fundamentalism," Norman E. Himes, ed., *Economics, Sociology, and the Modern World* (Cambridge, Mass., 1935), 3–22. The following writers consider the changes in agriculture as one phase of a general economic revolution: Hayes, *A Political and Cultural History of Modern Europe*, 2:35–40; Thorndike, *A Short History of Civilization*, 473–475, 484–485; Arthur Meier Schlesinger, *Political and Social Growth of the American People, 1865–1940* (New York, 1941), 56–59.

DRY FARMING ALIAS SCIENTIFIC FARMING

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Dry farming was very imperfectly understood by the settlers who moved into the semiarid region, roughly identified as the area west of the Missouri River, shortly after the turn of the twentieth century.[1] The meaning of the term is little better appreciated today. A recent writer has referred to the dry-farming movement as Jim Hill's "vision."[2] In so identifying dry-land agriculture he pointed to its most important aspect, its implications as a propaganda for settlement in areas of marginal rainfall. But dry farming, even in Montana, was not initially the project of James J. Hill. His influence, it may be noted, was not the only powerful force behind the movement; nor were the promotional phases of the development its sole claim to recognition. Bearing also the alternative name of "Scientific Soil Culture," the dry-farming propaganda rested much of its appeal on scientific experiment and scientific support. Commercial interests and settlers alike called upon agricultural science for definition of the program.

Dry farming had developed in the semiarid valleys of California, in the Columbia Basin of Washington, in eastern Colorado and western Kansas, and in the Mormon settlements of Utah by the late 1880s. A land boom based upon its possibilities had been launched already in eastern Colorado and western Kansas when the drought of the nineties brought disaster. Agricultural scientists, notably for the present study John Widtsoe of the Utah Agricultural Experiment Station, were exploring the problems of farming semiarid land without irrigation well before 1900.[3]

Recognition of the potentialities in such a movement had been slow to develop in the Plains, particularly so in the north; but in its simplest form as farming without irrigation dry-land agriculture had long existed there, too. As early as 1879 the Surveyor General of Montana reported that the lands along the valley of the Yellowstone "in most cases have been successfully cultivated without irrigation."[4] A decade later Hubert Howe Bancroft described crops of cereals raised upon the benchlands of Cascade and Choteau counties superior in quality to the grain of the irrigated valleys and yielding 30 bushels to the acre without irrigation.[5] Though an agent of the Geological Survey contended in 1892 that watering the crops was generally regarded as "indispensable," he noted that a few farmers in the foothills along the Gallatin Valley were raising wheat successfully without the practice; that fair crops were occasionally raised in like manner in Prickly Pear Valley, Chestnut Valley, the Judith Basin, and the plains above the Teton and the Marias rivers; and that irrigation was both scanty and infrequent throughout most of the farming areas of the State.[6]

Dry-land farmers suffered serious reverses during the drought years of the nineties, but the

[1] This article is part of an extensive study by the author on the historical development of dry farming in the Northern Plains. The part here printed was read in substantially its present form under the title, "The Campbell Method for the American Desert," at the joint meeting of the Agricultural History Society, the Economic History Association, and the Mississippi Valley Historical Association at Columbus, Ohio, on April 26, 1947.—*Editor.*

[2] Joseph Kinsey Howard, *Montana; High, Wide, and Handsome* (New Haven, 1943), 168ff.

[3] John A. Widtsoe, *Dry-Farming; A System of Agriculture for Countries under a Low Rainfall* (New York, 1911), 355–357, 368; Alvin T. Steinel and D. W. Working, collaborator, *History of Agriculture in Colorado . . .* (Ft. Collins, 1926), 247–255.

[4] Roswell H. Mason, "Report of the Surveyor General of Montana," in U. S. General Land Office, *Annual Report*, 1879, 421. See also John S. Harris, "Report of the Surveyor General of Montana," in *ibid.*, 1882, 440; and Nelson A. Miles, *Personal Recollections and Observations . . .* (Chicago and New York, 1896), 328.

[5] Hubert Howe Bancroft, *History of Washington, Idaho, and Montana, 1845–1889* (San Francisco, 1890), 775.

[6] F. H. Newell, "Water Supply for Irrigation," U. S. Geological Survey, *Annual Report*, 1891–92, 3:44–62, 69–73, *passim.*

disaster was neither so continuous nor so widespread in Montana as in other sections of the Plains. Despite growing interest in irrigation the total number of farms in the State increased somewhat more than the number of enterprises under ditch during the decade.[7] Settlers expanded the tracts of nonirrigated farm land adjacent to the Gallatin Valley, and dry farming spread onto the uplands of the Shields River Valley and the Judith Basin. The editor of the *Lewistown Democrat* in 1895 reported with prideful delight the successful crops of grain grown on the foothills of the Snowy Mountains: "It seems almost impossible to raise grain on this high land .... [But when any moisture at all falls, it is caught on these hills,] nearly always making a sure crop. All early grains can be raised and winter wheat also yields abundantly."[8] Even the cautious agent of the Geological Survey indicated that dry farming was conducted with some success in considerable areas of western and central Montana by the middle nineties:

> By taking advantage of local conditions of rainfall, by thorough cultivation, and by the selection of crops which withstand a considerable drought or which mature before the extreme heat of the year is felt, it has been found possible to obtain profitable crops in a few localities in each arid State. The production per acre is usually small, but it is possible to compensate for this low average value by tilling large areas of the fertile, easily worked soil.[9]

Despite the remarkable development of dry-land agriculture in an area where irrigation was commonly regarded as necessary, there was little publicity given to the trend before 1907. Many old-time residents feared to suggest the possibility of dry farming because of the danger that their desert land titles would be challenged; and promotional groups generally placed their hope in the possibility of expanding irrigation facilities under the Federal Reclamation Act, passed in 1902.[10] One exception was Paris Gibson, partner of James J. Hill in founding the town of Great Falls, and United States Senator from Montana, 1901 to 1905.[11] His testimony on the success of dry-land agriculture in the district between the Sun and the Marias rivers appeared in pamphlets issued by the Great Northern Railroad and the Montana Bureau of Agriculture, Labor and Industry as early as 1900.[12] Still more important was his comment in a speech in the United States Senate in 1904 on the possibility of expanding this development:

> .... There will be constant surprises in the future as to the extent of agricultural land in that region [between the one hundredth degree of longitude and the Pacific Ocean], as there have been in the past few years. Large areas of nonirrigable highland or table-land country adjacent to the Rocky Mountains, where the soil is less impregnated with alkali and the rainfall is greater than upon the lower lands, have already been found to be excellent agricultural lands and capable of producing by ordinary cultivation, one year with another, much more wheat to the acre than is harvested in the great wheat-producing State of Minnesota.
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> ....
>
> .... Better cultivation of the soil and new methods of

[7] The increase in the number of farms under irrigation was 117 percent; the total number of farms rose 138.6 percent during the decade. U. S. Census Office, 12th Census, 1900, *Agriculture*, 1:702, 2:843. Since but two-thirds of the farms were under irrigation, the relative increase in the number of unirrigated farms was somewhat greater than these figures indicate. Reference to the heavy movement of population out of the Black Hills counties of South Dakota, which had undergone comparable dry-farming development during the late eighties, shows the significance of this continuing effort in Montana.

[8] *Lewistown Democrat* (Lewistown, Mont.), Sept. 19, 1895; see also issues of Sept. 12 and Oct. 24, 1895.

[9] F. H. Newell, "The Public Lands and Their Water Supply," U. S. Geological Survey, *Annual Report*, 1894–95, 2:486.

[10] As late as 1904 James J. Hill remarked in an address to the Minnesota Agricultural Society that all the land cultivable without irrigation was gone. *Havre Plaindealer* (Havre, Mont.), Feb. 20, 1904.

[11] Gibson's early relationship with James J. Hill is cited in Bancroft, *History of Washington, Idaho, and Montana*, 773, note 14; and Paul Chrisler Phillips, "Gibson, Paris . . . ," *Dictionary of American Biography*, 7:256 (New York, 1931). It is a moot point whether Gibson's early effort to publicize dry-land development stemmed from his own initiative or from that of the railway magnate. In view of the emphasis upon irrigation in railway promotional literature and in the statements of railway development agents at this time, Gibson's personal interest in dry-land cultivation merits attention. See in this connection *Fergus County Argus* (Lewistown, Mont.), Dec. 2, 1903.

[12] Montana Bureau of Agriculture, Labor and Industry, *Report*, 1900, 189–190; Great Northern Railway Co., *General Information about Montana, A Homeseekers' Guide: What the Farmer Wants to Know about Climate, Land, Water, Fuel, Soil, Grain, Stock, Irrigation, Markets, Etc.; Information about Mineral Lands, Business Openings, Etc.; Also Description of Counties Traversed by Great Northern Railway* (St. Paul, 1900), 18–20.

preserving the moisture that falls upon it during the rainy season will year by year narrow the limits of our nonagricultural land . . . .

. . . . In solving the problem of agriculture in the far West we have a right to predicate much upon the excellent work that is being done by the Department of Agriculture in the introduction into the arid States of grains and forage plants from the dry steppes of eastern Europe and from Asia. Not only is the Department of Agriculture conferring great benefits in this respect upon the arid West, but its experiment work there in soil culture for certain crops will render productive vast areas of nonirrigable and, at present, unproductive land.[13]

In calling attention to the work of agricultural scientists Gibson pointed to a second agency focusing attention on the dry-farming development at this time. S. M. Emery, director of the Montana Agricultural Experiment Station, had observed in the *Montana Fruit-Grower* in October 1897: ". . . the precipitation of moisture in the vicinity of the mountain ranges is much greater than at a distance of a few miles, and under the system of summer fallowing as often as each third year, it is found that winter grains can be grown most successfully without irrigation."[14] Quoted in one of the publications of the Northern Pacific Railroad, this statement afforded the first widely publicized reference to the development. The report of the Montana Bureau of Agriculture, Labor and Industry for 1900 carried a similar reference to Emery's views.[15] Such comment rested not only on the practice of the Gallatin Valley wheat farmers in whose midst the Bozeman station was situated, but also on experiments in dry-land cultivation conducted on the station farm in 1898. Emery's procedural recommendations probably defined the technique applied: the soil plowed to a depth of 12 inches, "perfectly pulverized," and summer fallowed during alternate crop seasons.[16] Referring to these tests in 1902, the State agriculturist specifically mentioned the use of the "Campbell method."[17]

Samuel Fortier, who soon succeeded Emery as director of the station, had been connected with the Utah Agricultural Experiment Station, where the possibilities of dry farming had been seriously discussed as early as 1894. There he had begun observations on the soil moisture needed for crop growth, a work he resumed at Bozeman in 1902.[18] Though specifically related to irrigated farming, his publications on this subject within the next few years provided notable contributions to the theory of dry-land agriculture.[19] Moreover, Fortier was eager to extend the station's cultivation experiments into other areas of the State where the broad exposed benchlands offered conditions much more severe than in the favored valley of the Gallatin. In 1903 the State selected a tract at Wayne Siding, near Great Falls, as a temporary substation at which to test methods of dry-land agriculture and the storage of spring flood waters for stock watering and the irrigation of garden and orchard. Cropping of the plot began in the autumn of 1904.[20]

The year 1904 was notable in a number of respects relative to the rise of the dry-farming movement. In June F. B. Linfield, who like Fortier had previously worked at the Utah station and was now the latter's successor at the Montana institution, speaking at a farmers' institute in Lewistown, stressed the value of irrigation, but referred to the favorable climatic conditions for dry-land agriculture in the Judith Basin.[21] The season, however, proved unusually dry; and there were heavy crop losses in the area. At the same time the United States Reclamation Service, after considerable preliminary surveying in the State, decided to concentrate work on irrigating projects in the Huntley and Glendive districts, thus dimming the hopes of many communities which had envisioned development under the

[13] 58 Congress, 2 Session, *Congressional Record*, 38 (4):3607 (Mar. 24, 1904).

[14] S. M. Emery, "The Gallatin Valley," *Montana Fruit-Grower*, 7(24):3 (Oct. 29, 1897); also quoted at length in Olin D. Wheeler, *Wonderland '98 . . . Read It, Then Profit by Your Reading and Go and See It, Reached by the Northern Pacific Railway* (St. Paul, 1898), 37.

[15] Montana Bureau of Agriculture, Labor and Industry, *Report*, 1900, 191–192.

[16] *Ibid.*, 191.

[17] R. S. Shaw, "Agricultural Department," in Montana Agricultural Experiment Station, *Annual Report*, 1902, 21.

[18] Samuel Fortier, "Soil Moisture in Relation to Crop Yield," in *ibid.*, 101, 103.

[19] See especially Samuel Fortier, *Evaporation Losses in Irrigation and Water Requirements of Crops* (U. S. Office of Experiment Stations, *Bulletin 177*, Washington, 1907); and Widtsoe, *Dry-Farming*, 155, 158.

[20] F. B. Linfield, "Report of the Director," in Montana Agricultural Experiment Station, *Annual Report*, 1904, 191.

[21] *Fergus County Argus*, June 22, 1904.

Federal program.[22] That autumn the Northern Pacific Railway Company, having sold the bulk of its land in North Dakota, withdrew its Montana holdings from the market, and appealed to the United States Department of Agriculture for assistance in conducting experiments to determine whether these tracts could be cropped successfully if proper methods were used.

By an agreement reached in February 1905, the railway was to contribute $2,500; the Federal Government, $1,000; and the State of Montana $1,000 annually toward such work.[23] The following year the Federal Government withdrew its support, and the studies of irrigated agriculture which had been a part of the original program were dropped. At that time, however, the Great Northern Railroad joined in the project as conducted by the Montana Agricultural Experiment Station; and in 1909 the Chicago, Milwaukee, and Saint Paul line also subscribed to the work. As originally planned, the project entailed the establishment of a number of temporary experimental farms along the routes of the railroads. The Montana Experiment Station agreed to supply a competent man to direct the work and assumed responsibility for conducting the studies, compiling the data, and publishing the results, the last function at its own expense. Voicing his thanks for this support some years later, Dr. Linfield commented: "The only return asked from the Experiment Station was to find the facts, whatever they are, and publish them for the information of the people of this and other states."[24]

Under this program the station supervised work on six farms in 1906; but because of difficulty in getting help and preparations necessary in setting up the farms, the crop year 1907 afforded the first generally successful results.[25] Nevertheless, as early as the spring of 1907 the station leaders began to discuss publicly the value of dry farming. Seeking to get an increased appropriation for the State's share of the program, Director Linfield made a statement reported in the local press as "quite confident that the results would be most satisfactory, and that the money of the state could be invested in no more profitable way."[26] At a farmers' institute held at Lewistown in March, Linfield and W. X. Sudduth strongly endorsed dry farming. Asked whether with a known average precipitation of 10 inches in Fergus County there was adequate moisture for crop production, the experiment station leader answered that there certainly was.[27] In April, Alfred Atkinson, agronomist of the station, addressed the business men of Great Falls on the importance of proving the practicability of dry farming. If successful, he emphasized, the process would permit crop production on approximately 24,000,000 acres in the State that could never be irrigated.[28] Two weeks later an article by Atkinson on methods of dry farming appeared in the *Wibaux Pioneer*.[29] The *Havre Plaindealer* in October cited Atkinson's faith in the movement, and the farmers' institute held in Havre the following February featured the team of Linfield and Sudduth on the subject.[30]

The Montana Agricultural Experiment Station also issued a bulletin in 1907 on *Dry Farming in Montana*. In it Linfield and Atkinson observed:

> The results gained from experiments conducted by the Montana Experiment Station during 1906..., the work of Mr. W. H. [*sic*] Campbell of Lincoln, Nebraska, as well as results of experiments by the Colorado, Utah and other Experiment Stations show that profitable crop returns are possible in dry farming areas and indicate that the moisture must have been held in the soil for use by the crops.[31]

[22] U. S. Reclamation Service, *Annual Report*, 1903–04, 50, 52, 83–85 (ed. 2, Washington, 1905) and *Annual Report*, 1904–05, 32, 33, 189, 214 (Washington, 1906). The Milk and Sun river projects, which had been granted priority, were not abandoned; but they were delayed, the former by international complications which prevented completion of the St. Mary's Canal, an essential feature of the system, for over a decade.

[23] F. B. Linfield and Alfred Atkinson, *Dry Farming in Montana* (Montana Agricultural Experiment Station, *Bulletin 63*, Bozeman, 1907), 13–14. Statements of railway contribution to this work appear in the Montana Agricultural Experiment Station, *Annual Reports*, 12th–18th, for the fiscal years ending 1905–1911.

[24] Montana Agricultural Experiment Station, *Annual Report*, 1913, 156.

[25] F. B. Linfield, "Observation and Experience," in F. S. Cooley, ed., *Dry Land Farming and Kindred Topics* (Montana Farmers' Institutes, *Farmers' Bulletin 1*, Bozeman, 1908), 204–210.

[26] *Great Falls Leader*, reprinted in *Fergus County Argus*, Mar. 1, 1907.

[27] *Fergus County Argus*, Mar. 1, 1907.

[28] *Ibid.*, Apr. 5, 1907.

[29] *Wibaux Pioneer* (Wibaux, Mont.), Apr. 18, 1907.

[30] *Havre Plaindealer*, Oct. 5, 1907, Jan. 25, Feb. 8 1908.

[31] Linfield and Atkinson, *Dry Farming in Montana* 21.

And although the report of the station director for the year carried several limiting features, it was no less likely to rouse public enthusiasm for the movement:

> The dry farm investigations have progressed far enough to remove all doubt as to the successful and profitable cropping of the level non-irrigated lands of several sections of the state. Substantial progress has also been made in determining what methods should be followed to get these results. There are many questions yet to be worked out along this line looking towards more economic results and the greatest possible permanency in this method of agriculture.[32]

The station published another bulletin on the subject in 1908, announcing that dry farming could be carried on "in many sections" of the State with "reasonable profits on the money and effort invested." "This means," wrote Atkinson and J. B. Nelson, the authors, "that much of the great level area of the state which will never be irrigated may be made to support comfortable homes and pay returns to the state sufficient to place the 'dry lands' amongst the state's valued resources. . . ."[33] The station's endorsement of dry farming, together with an explanation of the theory and recommendations on procedure, constituted the material of the first *Farmers' Bulletin* of the Montana Farmers' Institutes, widely circulated in the winter of 1908–09.[34] Finally at the close of the crop season of 1908 the station gave the Northern Pacific Railway assurance that the lands on which the experiments had been conducted could be farmed without irrigation, and the line promptly placed its tillable lands on sale.[35] The dry-farming propaganda reached its peak in Montana during the next two years.

What was the program thus endorsed? In 1902 the station had referred to it as "the Campbell method." The first station bulletin on the subject cited Campbell's work correlative with that of the various State experimentalists. W. X. Sudduth, a regular speaker at the farmers' institutes of the period, was an ardent supporter of Campbell's procedures, even to the point of declaring in a formal address at a time when Campbell's views were under attack: ". . . I reiterate what I have said many times before, that he who follows Mr. Campbell's methods as closely as the local conditions will allow him, will never have a crop failure."[36] When F. S. Cooley, who handled the institutes as a part of the station's activities, compiled the first *Farmers' Bulletin*, he included not only reports of the experiments by Linfield and Atkinson, but also a statement of "Campbell's Contribution to Tillage Methods" by Sudduth and a selection, "The Campbell System; What Is It?" by Campbell himself.[37] So enthusiastic was Cooley over Campbell's work that an address by the institute leader at Lewistown in January 1909, led the *Argus* to report it had been proved conclusively that the Campbell system was the one that would give the best results and could be depended upon all the time. The editor of the journal observed further: "Altogether, the institute was the strongest endorsement of the Campbell system of intensive farming yet heard here."[38] Campbell personally appeared on the program of the next institute there, along with Sudduth, Cooley, Linfield, and Atkinson.[39]

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[32] Montana Agricultural Experiment Station, *Annual Report*, 1907, 170.

[33] Alfred Atkinson and J. B. Nelson, *Dry Farming Investigations in Montana* (Montana Agricultural Experiment Station, *Bulletin 74*, Bozeman, 1908), 63.

[34] Summarizing the results of the work at the substations, Linfield here concluded: "There are two or three things that these observations of the work carried on in so many parts of the state, and with uniformly good results, appear to clearly indicate. First: that with proper soil culture and correct farm management, crops may be grown successfully and profitably on the Montana dry farm." His other observations related to recommended crops and tillage procedure. Linfield, "Observation and Experience," in Cooley, ed., *Dry Land Farming and Kindred Topics*, 210.

[35] Thomas Cooper, land commissioner of the Northern Pacific Railroad, in Dry Farming Congress, *Proceedings . . . Billings, Montana, October 26, 27 and 28, 1909* (issued as Dry Farming Congress, *Bulletin*, v. 3, no. 3, Feb. 1, 1910), 115; hereafter cited thus: Dry Farming Congress, *Proceedings . . . Billings . . . 1909*. Company statistics on the disposition of their landholdings generally support this statement on the chronology of sale, but newspaper advertisements as early as the spring of 1908 indicated the availability of such land in the near future. *Wibaux Pioneer*, Apr. 30, 1908; see also *Fergus County Argus*, Mar. 6, 1908.

[36] Trans-Missouri Dry Farming Congress, *Proceedings of the Third Annual Session . . . Cheyenne, Wyoming, February 23–25, 1909* (Cheyenne, 1909), 39; hereafter cited thus: Dry Farming Congress, *Proceedings . . . Cheyenne . . . 1909*.

[37] Cooley, ed., *Dry Land Farming and Kindred Topics*, 73–81.

[38] *Fergus County Argus*, Jan. 22, 29, 1909.

[39] *Ibid.*, Oct. 12, 22, Nov. 5, 1909.

Hardy Webster Campbell was born on a farm in Vermont in 1850; but he left home at sixteen and appears to have had no further farming experience until he took up a homestead in Brown County, Dakota Territory, in 1879. He arrived there at the beginning of the Great Dakota Boom which led to the settling of the belt between the James and the Missouri rivers. What success he had in those early years of abundant crops is not known, but he himself referred later to "those five consecutive failures" which marked the close of the period with a heavy recession of settlement from the newly-occupied region.[40] His experiments in dry farming date from that time. If Campbell had had no particular training for farming, he likewise had had no very great predilections for the agricultural techniques of the humid region. His knowledge sprang from his experience on lands of marginal rainfall.

Reportedly, Campbell first realized the importance of packing the subsoil when he noticed that grass grew in horse tracks and wheel ruts across his fields while the rest of the land lay parched and barren. About 1890 he had constructed at a local blacksmith shop his first subsurface packer, a series of wedge-shaped wheels revolving about an axle, the wedges designed to cut deep into the soil, packing it at the bottom of the cut while loosening the topsoil into a mulch. The principles of a packed subsoil with a loose topsoil were the essential elements of Campbell's system during the drought period of the nineties, and formed the basis of the program which he sought to publicize through the Western Agricultural Improvement Company in 1895.[41]

[40] Trans-Missouri Dry Farming Congress, *Proceedings . . . Denver, Colorado, January 24, 25, 26, 1907* (Denver, 1907), 111; hereafter cited thus: Dry Farming Congress, *Proceedings . . . Denver . . . 1907*. For details of Campbell's early life, see A. P. Hitchcock, "The Farmer Who Found Another Half of the World," *Country Life in America*, 22(4):44 (June 15, 1912).

[41] For an account of this project, see Marc Malvern Cleworth, "Twenty Years of Brown County Agricultural History, 1880–1899," *South Dakota Historical Collections*, 17:110–111 (Pierre, 1934). Cleworth provides data placing the construction of the subsurface packer between 1890 and 1892. Campbell himself gave the year as 1885, but this does not appear supported by the chronology of the drought and of his effort to publicize his work. Campbell, moreover, was not always reliable in citing dates. Cf. *ibid.*, 110; and Campbell's statement in Dry Farming Congress, *Proceedings . . . Cheyenne . . . 1909*, 191.

If Campbell's exposition of subsurface packing won no very wide following for the Western Agricultural Improvement Company among the farmers of Brown County in 1895, it did impress the railroad companies interested in the development of the semiarid region. That same year Campbell began to operate five farms in South Dakota for "a leading railroad" and delivered about twenty lectures along the route of the Burlington.[42] The following year he managed farms in North Dakota, western Nebraska, eastern Colorado, and northwestern Kansas, under the auspices of the Burlington, the Northern Pacific, and the Soo railroads. By the next season his supervision extended over forty-three farms on four railroads in five States. Finding this program too comprehensive for careful management, he concentrated the effort in 1900 on the Pomeroy farm at Hill City, Graham County, western Kansas. Here and, beginning in 1903, at the Holdrege, Nebraska, farm of the Burlington line, Campbell was maintaining model farms demonstrating his procedures when his work began to receive nationwide attention about 1906.

Early in the nineties Campbell added another feature to his program, planting the grain in rows spaced so that inter-row cultivation was possible throughout the early part of the growing season.[43]

[42] The "leading railroad" was probably the Burlington, but it is not named in the account on which the statement is based: Charles Moreau Harger, "Pushing Back the Arid Line," *American Review of Reviews*, 27:432 (April 1903). Cf. address by Campbell in Dry Farming Congress, *Proceedings . . . Denver . . . 1907*, 200. Other accounts date the beginning of this work in 1896: see Herbert Quick, "Desert Farming Without Irrigation," *World's Work*, 12:7892 (August 1906); also by inference Campbell, *Campbell's 1902 Soil Culture Manual; Explains How the Rain Waters Are Stored and Conserved in the Soil; How Moisture Moves in the Soil by Capillary Attraction, Percolation and Evaporation, and How These Conditions May Be Regulated by Cultivation* (Holdrege, Nebr., 1902), 9. See also Campbell, "The Campbell System: What Is It?" in Cooley, ed., *Dry Land Farming and Kindred Topics*, 75.

Significantly the only reference to these early activities found in Montana newspapers of the period makes no mention of such work in the State and no comparison of Campbell's procedures to local dry-land cultivation. See *Lewistown Democrat*, Apr. 1, 1897.

[43] This practice was identified as the Campbell method in J. H. Shepperd and A. M. Ten Eyck, *Wheat Farming Experiments and Soil Moisture Studies* (North Dakota Agricultural Experiment Station, *Bulletin 48*, Fargo, 1901), 736, 748. In 1902 Campbell was urging

Finally in 1898, a year of low rainfall, he found crop yields so successful on land cultivated as fallow the preceding season that he adopted this practice.[44] By the time he published his first *Soil Culture Manual* in 1902, he had merged the concepts of subsurface packing and inter-row cultivation into the pattern of accepted agricultural procedure in the northern Plains. The system which became identified with Campbell's name thus included also deep fall plowing, thorough cultivation both before and after seeding, light seeding, and alternating summer fallow with the land tilled during the season of fallow as well as in crop years. The cycle for a plot in cultivation was to run as follows. As soon as possible after harvest, the stubble was to be harrowed with a disc harrow; if rain should come before the farm work schedule permitted plowing this land, the surface was again to be loosened. After discing, if the soil was workable and crops were to be planted for the next season, the land was to be plowed, packed with a subsurface packer, seeded, and harrowed, with the harrowing repeated after any rain throughout the autumn. As early in the spring as the frost was out of the ground and the surface dry enough for working, the land was to be disced again; and plowed, packed, seeded, and harrowed if these steps had not been possible in the fall. Seeding was to be done with a drill. Cultivation, now with a weeder, was to continue on the seeded ground as often as necessary to keep the topsoil loose, until the young plants had stooled sufficiently to shade the earth from the baking rays of the sun. If the land was to be left fallow, a practice to be followed every two or three years, the fall plowing was eliminated, but not the discing both in the autumn and as early in the spring as the soil was workable. And the process was to be repeated whenever spring rains were so heavy as to pack the surface. In June or early July the tract was to be plowed, subsurface packed, and harrowed, the packing to be completed by noon over the area plowed during the morning and all three processes to be finished for the area covered by the day's operations before the fields were left at sundown. Throughout the summer, the topsoil was to be loosened whenever a crust formed. Finally, prior to sowing, either in the fall or the next spring, the land was to be disced again.[45]

Campbell voiced firm opinions covering most of the details of this procedure. Harrowing was to be a double-discing operation, that is, with the disc lapped one-half on the second round. The plowing was to be 4 or 5 inches deep unless the plow were followed by a subsurface packer and 6 or 7 inches deep if the packer were used; if the farmer had no packer, he was urged to borrow one. The amount of seed for spring wheat was not to exceed half a bushel to the acre; for winter wheat, not over 20 pounds to the acre. Though he decried the emphasis currently placed on the use of seed drills because he considered the preparation of the seedbed more important than the manner of seeding, Campbell's early emphasis upon the merits of seeding in rows for facility in cultivating the growing wheat lent support to the use of drills; and he expressed strong preferences even as to the kinds of drill to be used. With the same specificity he prescribed the proper dimension for the diameter of the discs in that most important of implements, the disc harrow.[46]

However, so completely was Campbell identified with the general process of dry farming that the label of the Campbell method covered much work that bore little relation to the afore-mentioned outline of procedure. Interpreted by supporters who adopted what methods seemed to fit their conception of dry farming, the Campbell system signified everything from the extremes of deep plowing with a dust mulch, through the single process of occasionally allowing the land to lie fallow with or without summer tillage, even to the practice of unirrigated farming in the semiarid region without regard for precise method.[47]

cultivation of the young plants whether seeded broadcast or with the close drill. *Campbell's 1902 Soil Culture Manual*, 33.

[44] John L. Cowan, "The Campbell System of Scientific Soil Culture; 1, Evolution of Dry Farming," *Northwestern Miller*, 68:502 (Nov. 21, 1906).

[45] *Campbell's 1907 Soil Culture Manual; A Complete Guide to Scientific Agriculture as Adapted to the Semi-Arid Regions; The Proper Fitting of the Soil for the Conservation and Control of Moisture and the Development of Soil Fertility; How Moisture Moves in the Soil by Capillary Attraction, Percolation and Evaporation; The Relation of Water and Air to Plant Growth and How This May Be Regulated by Cultivation* (Lincoln, Nebr., 1907), 38–42, 45, 49, 52–53, 82–85, 177, 189, 192; Campbell, in Dry Farming Congress, *Proceedings . . . Denver . . . 1907*, 116–120.

[46] *Campbell's 1902 Soil Culture Manual*, 12, 16–17, 24, 34, 89; *Campbell's 1907 Soil Culture Manual*, 44, 181–183; Campbell, in Dry Farming Congress, *Proceedings . . . Denver . . . 1907*, 57, 59, 89, 216.

[47] Campbell, in fact, warned against over-deep plowing. *Campbell's 1902 Soil Culture Manual*, 17; Camp-

Campbell, bending in his effort to adjust his program to the views of the men he addressed, was subjected to charges of vagueness and inconsistency. In his *Soil Culture Manual* of 1907 he expressed his indifference as to whether plowing was done in the spring or the fall, so long as the land was in a proper condition of moisture.[48] Two years later he observed that "The plan of cropping every other year is not an essential of the system and is resorted to only incidentally."[49] In actuality the only points on which Campbell was consistently adamant were those involved in his basic conception of a firm subsoil with a loose topsoil.

Campbell's contribution to the publicity of dry farming was not alone his emphasis upon a method, but also the support which he gave to that procedure from the scientific learning of the period in which he formulated his views. During the latter part of the nineteenth century many research students in the field of agricultural physics were endeavoring to work out the scientific explanation for the efficacy of practices which had come into use in the semiarid region either unconsciously or out of deference to older ideas in agricultural theory. Farmers of the Northwest who may have permitted their land to lie fallow occasionally in conformity with the conception that land should be allowed to "weather" so that Nature might renew its fertility, those who may have appreciated the value of tilling a fallow field to rid it of weeds, were to be taught that land should be fallowed that it might build up a reservoir of water to be used for the succeeding crop. Much of Campbell's theory stemmed from his interpretation of the work of F. H. King, professor of agricultural physics at the University of Wisconsin, who in 1895 had published a volume entitled *The Soil, Its Nature, Relations, and Fundamental Principles of Management.*

The theory of Campbell's system rested upon concepts of the form and movement of water in soil. Water was known to appear in a saturated soil in three forms: as a film around the soil grains, water which filled the spaces between the soil particles, and the underground sheet of the water table. Under semiarid conditions the second category had little significance; the important considerations were the manner in which the soil particles retained a film of water and, in reaction to the drying effects of surface evaporation, attracted water from the lower depths to supply the deficiency. Campbell, relying on King, explained that as yet they were uncertain regarding the nature of the force which held the water to the soil particles, but attributed it to surface tension.[50] The movement of the water toward the surface, technically known as capillarity, was likened to the action of oil in a lamp wick, the liquid encountering a dry surface, engulfing it, pushing on over the adjacent surfaces until the level of liquid on the wick stood well above the base sheet. Applying these principles to agriculture, Campbell and King emphasized that the subsoil should be packed so that the spaces breaking the movement by capillarity would be minimized. And in order that the water coming to the top might not be lost by evaporation, the channels of upward flow must be broken by loosening the particles of the topsoil. Furthermore, cultivation must be done promptly after a rain which settled the mulch, for the upward movement of water was much more rapid once the resistance of the dry soil grains to the encroaching moisture was weakened, King having shown that the surface foot of soil contained a greater increase of water after a rain than was

bell, *Soil Culture Primer; A Plain and Practical Discussion of the Relation of Plants to the Soil and the Principles of Growth; The Laws Governing the Movement of Water in the Soil and Its Evaporation from the Surface, and the Principles of the Conservation of Soil Moisture by Cultivation, Together with a Full Description of the Practice of Scientific Soil Culture Known as the Campbell System, for the Use of Students and Practical Farmers Everywhere but Especially in the Semi-Arid Regions of the World* (rev. and ed. by Richard A. Haste, Lincoln, Nebr., 1914), 32–33.

Likewise, in the 1907 edition of his work, Campbell devoted a chapter to emphasis on the point that the surface mulch he recommended was not a dust blanket. The proper mulch was to be composed of lumps ranging in size from a pinhead to a walnut. *Campbell's 1907 Soil Culture Manual*, 247–250.

The cultivated fallow was never the whole of the Campbell method. This principle was among the last of the practices added to his system, and he subsequently minimized its importance. Even during the revival of interest in the Campbell system in the early 1920s, when the idea of summer tillage was raised to paramount importance by his followers, he confined the role of the cultivated fallow to its context in his general agricultural program.

[48] *Campbell's 1907 Soil Culture Manual*, 44–46.

[49] Dry Farming Congress, *Proceedings . . . Billings . . . 1909*, 143.

[50] *Campbell's 1902 Soil Culture Manual*, 47; F. H. King, *The Soil, Its Nature, Relations, and Fundamental Principles of Management* (New York, 1895), 135–138.

gained through precipitation.[51] That water held in the soil by the practice of mulching might be retained from one season to another and the store increased by a cultivated fallow was, likewise, vouchsafed by King's tests.[52]

Campbell's emphasis in discussing both theory and procedure was always upon methods of cultivation; he devoted little attention to those aspects of dry farming which related to the choosing of crops believed especially suited to semiarid regions or to the evolution of a stock-farming system of agricultural management. There was no discussion of the introduction of improved varieties in the first two editions of Campbell's *Soil Culture Manual*. He regarded it as possible under his methods to raise not only the common crops such as wheat, corn, and alfalfa, but also trees, shrubs, and garden vegetables.[53] In the 1907 edition of his *Manual* he acknowledged the value of the United States Department of Agriculture's effort to find new crops and varieties for the semiarid region; "But," he continued, "it will not do to place great dependence on the finding of plants that will grow in the deserts without application of special methods of cultivation."[54] Although he early expressed the desirability of getting the most out of the farm by diversification, as late as 1914 he opposed the coalescent principle of crop rotation, other than the possibility of a three-year cycle of summer fallow, wheat, and corn.[55] And Campbell's ideal that a farm should be no larger than a quarter section, intensively worked, offered no support for proponents of dry farming as an adjunct of stock raising.[56]

More important than Campbell's methods, because more widely publicized, was his faith that a program was being evolved which promised a brilliant future for the semiarid region as an agricultural empire. The semiarid lands were cheap, but rich with minerals that in humid areas were leached away by overabundant rainfall. By use of Scientific Soil Culture the dry farmer could control the moisture for his crops, barring alike the droughts which at times beset farmers in all parts of the country, and the drowning and leaching effects of an overabundant precipitation. In 1902 Campbell wrote: "It is altogether too common an idea that the quantity and quality of the crop depends upon the climatic conditions."[57] And about the same time, he observed: "It is unquestionably true that the farmer has it within his power to practically control the yielding powers of the soil, barring hail or insect pests, if he but understands the true fundamental principles of soil culture and plant growth.... We do not believe we have reached the limit, but are hopeful that after further careful experimenting we will be able to produce a yield that cannot be surpassed by any farmer in the more humid sections of Iowa or Illinois, and this in the semi-arid belt."[58] In 1907 Campbell was promising that if his plan of farming could be carried out, "there is no question in my mind but what the prairies of eastern Colorado, western Kansas, Nebraska and the Panhandle of Texas and a good portion of New Mexico—those regions I am more familiar with than the country farther north—can grow better average crops than they are growing in Illinois to-day, because we can secure the ideal condition, and control it, and they cannot do it in Illinois because they have too much rain."[59] And again in 1909 he observed: "I believe of a truth that this region which is just now coming into its own is destined to be the last and best grain garden of the world. Good farming can be done here better even than in the humid region, but the work must be understood and carefully applied."[60] Here Campbell voiced the credo of the dry-farming movement.

With few exceptions the methods recommended at that time by the Montana Agricultural Experiment Station were those advocated by Campbell:

[51] *Campbell's 1902 Soil Culture Manual*, 19–20, 22, 28–29, 32; King, *The Soil, Its Nature...*, 188–189, 195–197, 200–202.

[52] *Ibid.*, 291–292. King's studies, it should be noted, were conducted in humid Wisconsin.

[53] *Campbell's 1902 Soil Culture Manual*, 11, 69.

[54] *Campbell's 1907 Soil Culture Manual*, 232–234.

[55] *Campbell's 1905 Soil Culture Manual; Explains How the Rain Waters Are Stored and Conserved in the Soil; How Moisture Moves in the Soil by Capillary Attraction, Percolation and Evaporation; The Relation of Air to Plant Growth; and How These and the Physical Conditions of the Soil May Be Regulated by Cultivation* (rev. ed., Lincoln, Nebr., c. 1905), 86; Campbell, *Soil Culture Primer...*, 106.

[56] *Campbell's 1902 Soil Culture Manual*, 5; Campbell, in Dry Farming Congress, *Proceedings... Denver... 1907*, 205–206.

[57] *Campbell's 1902 Soil Culture Manual*, 35.

[58] Campbell, "The Campbell System; What Is It?" in Cooley, ed., *Dry Land Farming and Kindred Topics*, 76–77.

[59] Dry Farming Congress, *Proceedings... Denver... 1907*, 116.

[60] Dry Farming Congress, *Proceedings... Billings... 1909*, 144.

deep fall plowing; harrowing at least twice before planting; packing the subsoil while leaving a mulch on the surface; thin sowing; maintaining the mulch by frequent cultivation; and alternating a year's use of the land with a summer of fallow, "cultivated during the season in order to keep down weeds and volunteer grain and maintain a soil mulch for the accumulation of moisture."[61] However, on two significant points the Montana station leaders held reservations in relation to Campbell's work. First, they gave much more attention to selecting crops suitable to the climate and to adjusting the farm economy on a stock-growing basis. In their first publication on dry farming Linfield and Atkinson had based much of their enthusiasm for the movement upon its promise of a solution to the winter-feeding problems of the stock grower.[62] The second point of difference between the station workers and Campbell appeared in 1909 when Linfield spoke out against the promotional dangers inherent in Campbell's efforts to publicize his program.

Through his publications, through magazine articles based upon his work, and finally through his association with railroad, banking, and real-estate interests, which culminated in the organization of the Dry Farming Congress at Denver in 1907, Campbell had become the epitome of the dry-farming propaganda. At the session of this body in Cheyenne in January 1909, Campbell introduced a proposal to change the name of the organization to "Scientific Farmer's Congress" as an appeal for better agricultural methods applicable to all sections of the country.[63] But the underlying support for the suggestion was not so loftily inspired. An Iowa real-estate dealer, writing to the secretary of the congress in the summer of 1908, frankly voiced the difficulty he encountered because the public thought of the land as "dry":

> I run against this difficulty every day in attempting to sell lands in eastern Colorado, and I never use the word "dry" in any of my correspondence unless I say "dry farming, or farming without irrigation".
>
> The quicker you can get people to forget that that country was ever a dry country, the easier and quicker it will be to settle it up with good farmers.[64]

The struggle over the naming of the organization became an issue between those who supported the Dry Farming Congress as a media for agricultural education and those who looked upon it as an instrument for attracting settlers into the semiarid region. Linfield's views on the latter concept were voiced at Cheyenne, when he urged the Western States to use their funds for education of new settlers in methods necessary to successful farming of dry lands rather than to advertise inducements

[61] Linfield and Atkinson, *Dry Farming in Montana*, 25; Atkinson and Nelson, *Dry Farming Investigations in Montana*, 63, 83–85, 87; H. O. Buckman, "Moisture Control," in Cooley, ed., *Dry Land Farming and Kindred Topics*, 39–48; Linfield, "Observation and Experience," in *ibid.*, 212; Atkinson, "The Control of Moisture on the Dry Farm," in Trans-Missouri Dry Farming Congress, *Official Proceedings of the Second Session . . . Salt Lake City, Utah, January 22, 23, 24, 25, 1908* (Salt Lake City, 1908), 131, 135 (hereafter cited thus: Dry Farming Congress, *Proceedings . . . Salt Lake City . . . 1908*); *Fergus County Argus*, Oct. 24, 1905, Aug. 21 1908, Mar. 26, 1909; *Wibaux Pioneer*, Apr. 18, 1907, July 7, 1910; *Hardin Tribune* (Hardin, Mont.), Apr. 14, 1911.

Apparent differences between Campbell's methods and those recommended by the Montana station leaders were the latters' rejection of Campbell's early emphasis upon planting small grains in rows separated for intertillage (Atkinson and Nelson, *Dry Farming Investigations in Montana*, 63, 82), their acceptance of the roller and disc as a substitute for the subsurface packer (Atkinson, "The Control of Moisture on the Dry Farm," 134), their willingness to consider a cultivated crop as a substitute for the tilled fallow in preparation for succeeding grain crops (*ibid.*, 131; Linfield and Atkinson, *Dry Farming in Montana*, 30–31), and their preference for deeper plowing and finer mulching than Campbell recommended (Atkinson, "The Control of Moisture on the Dry Farm," 134; *Wibaux Pioneer*, May 6, 1909, July 7, 1910). Inasmuch as Campbell himself had abandoned his earlier advocacy of planting in widely spaced rows and the station continued to emphasize the summer fallow, none of these differences was fundamental.

[62] Linfield and Atkinson, *Dry Farming in Montana*, 4. Sudduth also emphasized the importance of a diversified crop rotation and livestock for the dry farm. Dry Farming Congress, *Proceedings . . . Cheyenne . . . 1909*, 38.

[63] *Ibid.*, 192. A resolution to change the name of the assembly was offered at the Salt Lake City session of 1908, but it met such opposition that it was never reported out of committee. Lyman J. Briggs to John T. Burns, Sept. 25, 1908 (copy of letter filed in National Archives).

[64] F. C. Lougee to Burns, Aug. 24, 1908 (copy filed in National Archives).

for others to move into the area.[65] When the issue of changing the name of the congress reached a climax at the session in Billings in October 1909, with officers of the Great Northern and Northern Pacific railroads threatening to withdraw their support unless the offensive name were dropped, Linfield led a majority of the Montana delegation in opposing the change.[66]

The reservations held by the Montana station leaders relative to Campbell's work marked the major areas of agreement between them and the Office of Dry Land Agriculture of the United States Department of Agriculture. Established in 1905, this office was placed under the direction of E. C. Chilcott, who in the years immediately preceding this appointment had been director of the South Dakota Agricultural Experiment Station. Chilcott asserted his "unbounded faith in the development of the West," but he was strongly opposed to the promotional aspects of Campbell's work and, in particular, to the latter's claim of introducing new methods of dry-land agriculture.[67] As spokesman of departmental policy, Chilcott granted no recognition of Campbell's leadership and no endorsement of the so-called Campbell System.

The reaction of Chilcott and his associates to the publicity accorded Campbell's program was promptly and forcefully expressed. When the *Century Magazine* gave general circulation to Campbell's views in July 1906, C. S. Scofield, a co-worker in the Bureau of Plant Industry, brought the matter to Chilcott's attention with the comment: "This magazine is labelled 'The Fiction Number,' and I think the sub-title is very appropriate."[68] Somewhat more tactfully Chilcott expressed the attitude in a letter to an Australian correspondent who inquired about the article and others appearing at this time. Chilcott wrote:

> Now we do not wish to discourage anyone from adopting the methods and practices advised by Mr. Campbell and his associates. We believe that many of these practices are commendable. What we object to, however, is the circulation of the statement that there is anything new or wonderful about these methods, or that there is any reason for them being spoken of as a definite system under the name of the Campbell System or any other such name.... We also object to the wild and extravagant statements that are being circulated concerning the results obtained from these practices. Good farming will pay better in the semi-arid portions of the country than will poor farming, but no method of tillage can entirely overcome the effects of the serious shortage of rainfall which has in the past, and probably will in the future, be experienced in the Great Plains Area
>
> ....
>
> .... In so far as he [Campbell] has encouraged the practice of better methods of agriculture, he has been a public benefactor and should be given full credit, for his work. In so far as he and his associates have endeavored to create the impression that some new and wonderful discovery has been made that is to revolutionize the agriculture of the semi-arid west, they deserve censure. Such extravagant statements as those contained in the magazine articles mentioned are certain to do harm, as they create an entirely erroneous impression concerning the agricultural conditions and possibilities of the Great Plains Area.[69]

Hearing of this comment, Campbell wrote to the Secretary of Agriculture, inquiring if this view held his endorsement. Chilcott wrote the reply stating that his letter represented the attitude of the Department.[70]

The conflict came into the open at the early sessions of the Dry Farming Congress. As the closing act of the first meeting, after many of the leaders had left, a resolution was passed "approving the fundamental principles of soil culture as practiced by Professor H. W. Campbell of Bethany, Nebraska."[71] Speaking at the next session, Chilcott stressed "the utter futility of any attempt to establish a definite system of tillage based upon any limited experience in restricted localities and under circumstances where at best only a very few of the many factors involved can be measured; such as has been made by parties interested in the commercial exploitation of lands in the semi-arid districts."[72] At the third congress in Cheyenne,

[65] Dry Farming Congress, *Proceedings ... Cheyenne ... 1909*, 189.

[66] Dry Farming Congress, *Proceedings ... Billings ... 1909*, 26, 52, 55–56, 102–108. See also Howard, *Montana; High, Wide, and Handsome*, 173.

[67] Chilcott, in Dry Farming Congress, *Proceedings ... Denver ... 1907*, 17, 28.

[68] C. S. Scofield to E. C. Chilcott, no date given (filed in National Archives).

[69] Chilcott to Herbert K. Bors, Oct. 5, 1906 (copy in National Archives).

[70] Wilson to Campbell, May 10, 1907 (copy in National Archives).

[71] Dry Farming Congress, *Proceedings ... Denver ... 1907*, 248.

[72] Chilcott, "Dry Farming—Past and Future," in

January 1909, Chilcott's summary of the results of the experimental work of his office carried a further indictment of Campbell's work:

> Briefly our conclusions are:
>
> That vastly more data than we yet possess must be gathered before anyone will be warranted in making any broad and sweeping generalizations concerning methods and systems of dry land agriculture, such as are so freely made by a certain class of popular writers who have little or no experimental results upon which to base their assertions. We have demonstrated beyond a question that very few of the hard and fast rules, so confidently laid down by this class of writers are of such universal application as they claim .... the methods which give most satisfactory results one year, will sometimes fail completely to give the same results another year on identically the same soil. And ... what will bring good results at one station will fail utterly to give like results at another station, even when climatic conditions are similar.[73]

The meeting subsequently resolved that publications of the congress should advocate no special system of dry farming, and Campbell's influence in the organization rapidly declined.[74]

The period of heaviest dry-farming propaganda was for the United States Department of Agriculture a time of experimentation. Its major positive contribution during the crucial years lay in the effort to foster use of crops adapted to semiarid conditions. This project had two aspects: the introduction of hardy varieties from other countries where similar climatic conditions prevailed and the breeding of strains with the desired properties by selection from local varieties. Both phases began to take on impetus as an effort to meet the problem of drought about 1897. That year Nils E. Hansen made the first of several explorations for new plant varieties in southeastern Russia, Turkestan, Siberia, and western China, the zone being extended subsequently into the Mediterranean region and Manchuria. His expeditions yielded the yellow-flowered Siberian alfalfa, numerous varieties of proso or broomcorn millet, and the sorghum Kaoliang.[75] Mark Alfred Carleton returned from a trip into southern Russia and Siberia in 1899 with such notable varieties as the durum wheats, Swedish Select oats, Yaroslaf emmer, a fox-tailed millet called Kursk, and several additional broomcorn millets.[76] At the Paris Exposition in 1900 Carleton acquired an excellent strain of Hanna barley, and the following year David G. Fairchild introduced several other promising barleys from Moravia and Sweden.[77] These importations were placed under experiment and carefully bred for drought resistance. At the same time local crops, particularly winter wheat and corn, were being developed for hardiness to cold—the former because of its early maturity as an important safeguard against drought, and the latter because of its value as an adjunct to stock raising.[78]

In the planning of the Department of Agriculture the maintenance of a balanced farm economy was a prime consideration. No program for permanent agriculture in the region could succeed without provision for renewing soil fertility. Moreover, diversification had already evolved as a protection against drought in the subhumid belt bordering the semiarid region, and a rotation

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Dry Farming Congress, *Proceedings ... Salt Lake City ... 1908*, 77.

[73] Dry Farming Congress, *Proceedings ... Cheyenne ... 1909*, 141.

[74] *Ibid.*, 243.

[75] Nils E. Hansen, *The Wild Alfalfas and Clovers of Siberia, with a Perspective View of the Alfalfas of the World* (U. S. Dept. of Agriculture, Bureau of Plant Industry, *Bulletin 150*, Washington, 1909), 7–10, and *Proso and Kaoliang as Table Foods* (South Dakota Agricultural Experiment Station, *Bulletin 158*, Mitchell, 1915), 161–167, 175–176.

[76] Mark Alfred Carleton, *Russian Cereals Adapted for Cultivation in the United States* (U. S. Dept. of Agriculture, Division of Botany, *Bulletin 23*, Washington, 1900), 4, 14–16, 21, 24–26, 28–30. The Department of Agriculture also introduced Sixty-Day oats in 1901, by importation from Podolia province, Russia. C. W. Warburton, *Sixty-Day and Kherson Oats* (U. S. Dept. of Agriculture, *Farmers' Bulletin 395*, Washington, 1910), 8.

[77] Cecil Salmon, *Dry-Land Grains for Western North and South Dakota* (U. S. Dept. of Agriculture, Bureau of Plant Industry, *Circular 59*, Washington, 1910), 19, note 2; Mark Alfred Carleton, *Barley Culture in the Northern Great Plains* (U. S. Dept. of Agriculture, Bureau of Plant Industry, *Circular 5*, Washington, 1908), 9, and *The Small Grains* (New York, 1916), 176.

[78] Mark Alfred Carleton, "Successful Wheat Growing in Semiarid Districts," in U. S. Dept. of Agriculture, *Yearbook*, 1900, 542, and *The Basis for the Improvement of American Wheats* (U. S. Dept. of Agriculture, Division of Vegetable Physiology and Pathology, *Bulletin 24*, Washington, 1900), 40; W. M. Jardine, in Dry Farming Congress, *Proceedings ... Salt Lake City ... 1908*, 93; Cecil Salmon, *Winter Wheat in Western South Dakota* (U. S. Dept. of Agriculture, Bureau of Plant Industry, *Circular 79*, Washington, 1911), 3.

designed to provide stock feed would harmonize with the existing economy of the Plains.[79] This conception provided one of the major grounds for attack on Campbell's use of the summer fallow. The practice destroyed the humus without provision for renewal, and a bare field was uneconomic use of land. Would not an intertilled crop such as corn serve as well for moisture conservation and yet give a feed crop in return? W. M. Jardine, head of dry-land grain investigations for the Bureau of Plant Industry, offered this conjecture at the first session of the Dry Farming Congress.[80] At the same meeting Chilcott urged the use of a leguminous crop, turned under before it dried out, as a substitute for the summer fallow.[81] Secretary of Agriculture James Wilson informed the Dry Farming Congress in 1909 that he was "satisfied the system of fallowing, or cultivating two years for one crop is in the wrong direction."[82] The classic treatment of the importance of rainfall distribution and evaporation in relation to dry-land agriculture, written by Lyman J. Briggs and J. O. Belz, and issued by the Bureau of Plant Industry in 1910, emphasized the undesirability of summer-fallow procedure for the northern Plains, where greatest rainfall occurred during the summer months and where precipitation came in the form of little showers.[83]

On other phases of Campbell's system, however, the Department was less certain of its stand. As early as 1900 Carleton had advised deep fall plowing, occasional surface cultivation, especially after rains, early seeding, and the cultivation of young grain as measures of moisture conservation.[84] Chilcott's recommendations in 1907 included these features together with light seeding and subsurface packing.[85] But Jardine at the same time noted variable results relative to the time and depth of plowing and doubted whether intertillage of growing grain would ever be found practical in large-scale wheat production.[86] Chilcott's observations subsequently reiterated this uncertainty. The *Yearbook* of the Department of Agriculture in 1911 carried an article by Chilcott on "Misconceptions Concerning Dry Farming," which listed as among the most serious:

> (1) That any definite "system" of dry farming has been or is likely to be established that will be of general applicability to all or any considerable part of the Great Plains area; (2) that any hard and fast rules can be adopted to govern the methods of tillage or of time and depth of plowing; (3) that deep tillage invariably and necessarily increases the water-holding capacity of the soil or facilitates root development; (4) that alternate cropping and summer tillage can be relied upon as a safe basis for a permanent agriculture or that it will invariably overcome the effects of severe and long-continued droughts; and (5) that the farmer can be taught by given rules how to operate a dry-land farm.[87]

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[79] M. L. Wilson, "The Evolution of Montana Agriculture in Its Early Period," Mississippi Valley Historical Association, *Proceedings*, 1917–18, 9:440; Herbert S. Schell, "Drought and Agriculture in Eastern South Dakota during the Eighteen Nineties," *Agricultural History*, 5:174–180 (October 1931); James C. Malin "The Adaptation of the Agricultural System to Sub-Humid Environment, Illustrated by the Activities of the Wayne Township Farmers' Club of Edwards County, Kansas, 1886–1893," *ibid.*, 10:126–141, *passim* (July 1936); Frank W. Blackmar, "Kansas after the Drought," *American Review of Reviews*, 24:314, 317–318, 320 (September 1901); Ernest Staples Osgood, *The Day of the Cattleman* (Minneapolis, 1929), 226–237.

[80] Dry Farming Congress, *Proceedings . . . Denver . . . 1907*, 33–35; also John S. Cole, "Lessons from the Dry Farming Investigations of the Department of Agriculture," in Dry Farming Congress, *Proceedings of the Fifth Annual Session . . . Spokane, Washington, Oct. 3, 4, 5 and 6, 1910* (issued as Dry Farming Congress, *Bulletin*, v. 3, no. 23, Dec. 1, 1910; hereafter cited thus: Dry Farming Congress, *Proceedings . . . Spokane . . . 1910*), 611–612. Cf., however, Salmon, *Winter Wheat in Western South Dakota*, 9.

[81] Dry Farming Congress, *Proceedings . . . Denver . . . 1907*, 25.

[82] James Wilson to John T. Burns, no date given, in Dry Farming Congress, *Proceedings . . . Billings . . . 1909*, 54.

[83] Lyman J. Briggs and J. O. Belz, *Dry Farming in Relation to Rainfall and Evaporation* (U. S. Dept. of Agriculture, Bureau of Plant Industry, *Bulletin 188*, Washington, 1910), 8, 14–15, 30.

[84] Carleton, "Successful Wheat Growing in Semiarid Districts," U. S. Dept. of Agriculture, *Yearbook*, 1900, 538; Carleton, *Macaroni Wheats* (U. S. Dept. of Agriculture, Bureau of Plant Industry, *Bulletin 3*, Washington, 1901), 46; Carleton, *Barley Culture in the Northern Great Plains*, 11–12.

[85] E. C. Chilcott, "Dry-Land Farming in the Great Plains Area," U. S. Dept. of Agriculture, *Yearbook*, 1907, 464–466.

[86] Dry Farming Congress, *Proceedings . . . Denver . . . 1907*, 34, 35.

[87] E. C. Chilcott, "Misconceptions Concerning Dry Farming," U. S. Department of Agriculture, *Yearbook*, 1911, 256.

The conclusions of over ten years' experimentation by the Department of Agriculture, as announced at the meeting of the Dry Farming Congress in 1915, brought a final sweeping attack not only on the details of dry-farming procedure but also on the fundamental scientific theory. W. W. Burr asserted that in all the data resulting from the Department's investigations "there is no evidence of any appreciable movement of water, by capillarity, toward the surface, except in subirrigated areas where sheet water is within capillary limits of the surface." Since this condition was relatively rare in the semiarid region, he denied the merits of the tilled fallow field as a reservoir of water for succeeding crops except as moisture-robbing weeds were thus controlled:

> Misconceptions of the real purpose of cultivation may result not only in unnecessary work and expense, but may in a measure defeat the object sought and even result in damage. Too fine and compact a surface, which results from too frequent cultivation or from cultivation of the wrong kind, will not only prevent the water from entering the soil, but will render the soil liable to damage from blowing.[88]

Discing after harvest and before plowing, he continued, was warranted only to prevent weed growth; and in that case early plowing would be a more economical means of destroying weeds. The Department had still found no set rule as to the best time for plowing, no set rules for farm practice in general: "Any system of farming to be successful, under the erratic climatic conditions that prevail in the plains, must be sufficiently elastic to permit the operator to meet the conditions as they arise."[89]

These conclusions were not popular with western experiment station leaders. Men like Widtsoe of Utah and Jardine, then at the Kansas Agricultural College, had early repudiated Campbell's pretensions as an innovator, but they still had faith in the dry-farming movement. They were incensed at the negative attitude of the Department.[90] As early as 1910 Atkinson of the Montana Agricultural Experiment Station was reported as having long felt that the relations of the Department with the Dry Farming Congress were unsatisfactory.[91] Representatives of the Department of Agriculture had fought to overthrow Campbell's leadership, but for his program they were prepared to offer no substitute. The settlers were coming into the region, and they must have guidance. Until the widespread adoption of the county-agent system with the entrance of the United States into World War I, media were lacking for the individualized instruction which alone could meet the Department's objections to a generalized technique. In 1910 the Montana station turned to a new popular interpreter of dry-land agriculture.

For the next six years the featured authority on dry farming in Montana was Thomas Shaw, agricultural expert for the Great Northern and the Northern Pacific railways. Shaw commanded respect by virtue of his record as professor of animal husbandry at the Minnesota Agricultural College.[92] Whether as an assertion of the scientist's independence of thought or as a gesture to close the breach between the Dry Farming Congress and the Hill interests, his emphasis upon the problems of western agriculture in an address at the Billings meeting had further qualified him as a reputable leader. Boldly Shaw announced:

> There is no use to shut our eyes to the fact that this is a dry country. The man who is afraid to say it is something of a coward. It is a dry country and I do not care what name we put to it, we cannot get away from the fact that it is a dry country. Let us try to handle the land with the full understanding that we are handling the land in a country where the annual precipitation is less than the average.[93]

His public comments on Campbell's teachings were equally acceptable to the many experiment station workers who supported such methods but deplored Campbell's pretensions as an innovator. Shaw traced the evolution of dry-land procedures to the farmers of Utah and condemned Campbell's attempt to formulate a "system" without regard for varying soil conditions.[94] That Shaw also criticised the "undue caution" of the United States

[88] Burr, "Cultivation to Conserve Soil Moisture," in International Dry-Farming Congress, *Proceedings of the Tenth Annual Sessions . . . Denver, Colorado, October 4–7, 1915* (Denver, 1915?), 93, 95.

[89] *Ibid.*, 96–98.

[90] Discussion in *ibid.*, 129–132.

[91] Burns to Briggs, Mar. 10, 1910 (original in National Archives).

[92] Minnesota Farmers' Institutes, *Annual*, 5:18–19 (Minneapolis, 1892); *Farmer* (St. Paul), 36:1086 (July 6, 1918).

[93] Dry Farming Congress, *Proceedings . . . Billings . . . 1909*, 284; see also Thomas Shaw, *Dry Land Farming* (St. Paul, 1911), 1.

[94] Shaw, *Dry Land Farming*, 39–40.

Department of Agriculture was no indictment of his scientific attainments in the view of western agricultural leaders.[95] During 1908 he had lectured on the farmers' institute circuit in North Dakota, reaching into Montana at a meeting in Wibaux. A year later he began to figure prominently on the Montana institute system.[96] For the next five years his recommendations were a feature of the "On the Farm" columns carried in many Montana newspapers.

Such activities, however, were but part of Shaw's work for the northern railroads. As early as 1900 his belief in the potentialities of dry-land agriculture had provided authority for a statement on the development in a bulletin of the Great Northern.[97] He left the editorship of the *Farmer* of Saint Paul in 1905 to do agricultural propaganda work for the Hill interests. In the summer of 1908 he focused widespread attention on dry farming when he surveyed the benches of the Judith Basin for the *Orange Judd Farmer* and reported this a "Marvelous New Farming Region."[98] Whether this activity was a feature of his work for the railroads is not clear, but the appearance of this article was simultaneous with the emergence of publicity for the region newly opened by the construction of the Chicago, Milwaukee, and Saint Paul extension to the coast. In September 1909, it was announced that Shaw held a very responsible position with the Great Northern.[99]

The following spring Shaw launched a vast program of agricultural demonstration for the railway along the Montana High Line. Forty-five farms were conducted under his direction in 1910; forty-two in 1911, when the project was extended into North Dakota as well. Hailed as "the most extensive work of the kind ever undertaken by any one railroad system," the venture was highly publicized.[100] During the first season, the very dry one of 1910, the Great Northern conducted a party of agricultural and commercial leaders to witness the results. As locally reported, the visit "practically dispelled from the mind of the most persistent doubter that dry land farming will be a failure in Montana."[101] Shaw spoke with even greater enthusiasm at the Spokane meeting of the Dry Farming Congress: "The results obtained on this farm [at Chester] and other places where crop was sown on summer fallowed land make it absolutely certain that a reasonable return may be obtained from such bench lands though the season should be very dry."[102] His remarks before this assembly may have served as a recommendation for the educational program he offered; but when he spoke a few months later with similar assurance as a feature of the Montana Day proceedings at the National Farm Land Show at Chicago in 1910, his function was distinctly promotional.[103] An account in the *Northwestern Miller* in 1912, featuring the work of the railroad development agency, accurately attributed much of the momentum behind dry farming in Montana at that time to Shaw's work for the Great Northern.[104] Like Campbell, Shaw placed his teachings at the disposal of promotional interests. He added something more, namely scientific eminence as a foundation for the propaganda.

Working within the northern Plains, Shaw was able to give a timeliness and regional specificity to his advice which more closely approximated the services of a county agricultural agent than Campbell's rigid formula for dry-land farming. In the spring of 1913, for instance, Shaw noted that because of an unusually rainy season with threshing delayed the preceding year, few farmers in the Northwest were prepared for early seeding. A great majority of them had given little attention

[95] *Ibid.*, 37–38.

[96] *Dickinson Recorder* (Dickinson, N. Dak.), Nov. 28, 1907, July 2, 9, Oct. 8, 15, Nov. 5, 1908; *Wibaux Pioneer*, June 18, 1908, Mar. 24, 1910; *Havre Promoter* (Havre, Mont.), Nov. 19, 1909, Nov. 18, Dec. 2, 1910; *Hardin Tribune*, Mar. 11, 1910; *Plentywood Herald* (Plentywood, Mont.), July 21, 1911.

[97] Great Northern Railway Co., *General Information about Montana . . .*, 16–17.

[98] Shaw, "Marvelous New Farming Region; Prof. Thomas Shaw Visits Judith Basin . . .," *Orange Judd Farmer*, 45:45, 47 (July 18, 1908).

[99] *Havre Promoter*, Sept. 24, 1909; *Wibaux Pioneer*, Jan. 27, 1910.

[100] Shaw, *Dry Land Farming*, 37; W. P. Kirkwood, "The Railroad Development Agent as the Farmer's Neighbor," *Northwestern Miller*, 92:328 (Nov. 6, 1912); Hoke Smith, "A Railway Revolutionizes Farming," *Leslie's Illustrated Weekly Newspaper*, 116:372 (Apr. 3, 1913).

[101] *Havre Promoter*, July 29, 1910.

[102] "Dry Farming Methods and Rotation," in Dry Farming Congress, *Proceedings . . . Spokane . . . 1910*, 516.

[103] A digest of this address appeared in *Wibaux Pioneer*, Feb. 3, 1911.

[104] Kirkwood, "The Railroad Development Agent as the Farmer's Neighbor," 328.

to maintaining a cultivated fallow or an acreage in cultivated crops; most had been unable even to plow in the fall. Shaw, therefore, cautioned against late planting of grain, advising increased acreage in flax and corn fodder and extension of the cultivated fallow.[105]

Shaw's attention to crops adapted to dry-land conditions was another feature of the flexibility which Campbell did not possess. To the northern leader special crops ranked with special methods in dry farming.[106] Plants for the area, he stressed, must be selected as classes and varieties which offered drought resistance, special capacity to gather food, and early maturity, as well as marketability and service in the farm economy. He recognized the merits of the crop studies of the United States Department of Agriculture and the State experiment stations. His recommendations on varieties agreed with theirs; so did his more general observations upon the classes of crops to be raised. He encouraged the expansion of winter wheat in the Northwest, particularly before the introduction of the Marquis variety of spring wheat. Moreover, while he noted that cereals were most likely to succeed in dry areas, he emphasized the value of legumes.[107] On the 6-acre demonstration plots conducted under his supervision, 2 acres were to be in durum wheat, spring rye, or white hull-less barley; 1 in peas; 1 in corn; a half acre in alfalfa; the other half in field beans; and an acre left fallow to be sown with winter wheat.[108]

In focusing attention upon crop diversification Shaw represented the views of the agricultural scientists who had criticized Campbell's indifference to the problem of renewing soil fertility and his assurance that the dry lands could with certainty support a strictly agricultural economy. Legumes and corn in the crop rotation provided for the maintenance of rich soils. In view of the virgin fertility of the unleached soils of the semi-arid regions, such a consideration was of prime concern only to those who planned for the future agricultural development of the area. However, more immediately important reasons for diversifying the farm organization were apparent when the dry seasons of 1910 and 1911 sharply reduced wheat yields while the market price of grain fell below its value as feed.[109] Shaw taught that "the presence of the cow and the brood-sow are about as essential to the farm home in dry areas as the presence of the breaking plow."[110] Thus the theory of dry-land agriculture evolved toward a combination of ranch and farm economies which had been developing in practice ever since the cattleman realized the perils of the open-range system, long before the grain grower invaded the land.

There was, however, still an important distinction: the dry-farming propagandist talked of the cow; the western stockman spoke of the steer. Shaw thought in terms of the homesteader. His statement on the importance of livestock was preceded by a recognition that the settler's first efforts were usually concentrated, "and properly so," on the production of grain. "Some time in the future," he wrote, "farmyard manures will be an important source of humus in dry areas. That, however, will not follow for many years to come, as the farmers will center their efforts on growing crops for sale rather than on growing crops for feeding uses."[111] His conception was fundamentally in agreement with that of Campbell, a vision of dry-land development into thousands of small farms like those of the Middle West. Shaw's less formalized recommendations, his appreciation of the importance of crop selection, and his attention to stock growing were but refinements of Campbell's program.

In methodology, too, Shaw only modified the Nebraskan's system. Here as in other aspects of his teaching, Shaw displayed greater recognition of the differences in local conditions. Land should

[105] *Plentywood Herald*, Mar. 28, 1913.

[106] Shaw, *Dry Land Farming*, 5–8.

[107] *Ibid.*, 204–205, 310–339, and *passim;* Shaw, "Dry Farming Methods and Rotation," in Dry Farming Congress, *Proceedings . . . Spokane . . . 1910*, 518–519; Shaw, "Farming," in Montana Department of Agriculture and Publicity, *The Resources and Opportunities of Montana; 1914 Edition* (Helena, 1914), 78–80; *Wibaux Pioneer*, Feb. 3, 1910; *Plentywood Herald*, Jan. 9, 1914; *Fergus County Argus*, Jan. 23, Apr. 10, 1914, Feb. 18, 1916; *Havre Plaindealer*, Jan. 23, May 1, 1915; *Williston Herald* (Williston, N. Dak.), Apr. 5, 1911.

[108] *Havre Promoter*, Feb. 4, 1910.

[109] *Fergus County Argus*, Mar. 25, 1913, Apr. 3, 1914; International Dry-Farming Congress, *Proceedings of the Ninth Annual Sessions . . . Wichita, Kansas, October 12–15, 1914* (Wichita, 1914?), 32; and *Proceedings . . . Denver . . . 1915*, 162–163.

[110] Shaw, *Dry Land Farming*, 424; see also *Havre Promoter*, Nov. 20, Dec. 18, 1914.

[111] Shaw, *Dry Land Farming*, 416, 424.

be plowed deep, to a depth of 6 to 10 inches, he advised; but not when the soil was shallow and not when it was so heavy or so root-bound that such plowing would be overcostly. He favored fall plowing, but not when the soil lacked moisture and not when the district was likely to receive heavy snows, which stubble would better retain.[112] Use of the subsurface packer was recommended when lands were trashy, cloddy, or dry, but opposed when the soil was moist or overtenacious.[113] Shaw supplemented Campbell's explicit instructions on the nature of the desired mulch with a warning that repeated harrowing in dry weather would make the soil too fine. Frequent cultivation, nevertheless, was an essential feature in Shaw's technique.[114] Finally, although he stressed the value of a cultivated crop such as corn in retaining moisture for use the next season, he placed major emphasis upon maintenance of an acreage in cultivated fallow as a part of the rotation system.[115]

Above all, Shaw shared Campbell's faith in the practicability of dry-land agriculture. After the drought of 1910, the Great Northern's agent reported at the Spokane meeting of the Dry Farming Congress: "That reasonably good crops may be grown on the average bench lands any season has been demonstrated during the past season."[116] Citing winter-wheat yields of 20 bushels to the acre raised that year with only 3½ inches of rainfall during the growing season, Shaw predicted that Montana would soon produce 100,000,000 bushels of winter wheat annually. This estimate was featured in the *Northwestern Miller* in 1912, together with the comment: " 'It is simply fun,' says Prof. Shaw, 'to grow grain in Montana with 15 inches of rain.' "[117] The rainfall qualification to this statement was significant. Elsewhere Shaw noted that in the valleys of the Milk and Bighorn rivers, the country contiguous thereto, and a small area running diagonally across the central portion of the State the average annual rainfall was somewhat less than 15 inches.[118] Under such conditions he believed special methods of farming were necessary to insure profitable production, but he considered dry-land agriculture "generally safe and remunerative" with as little as 10 inches of rainfall.[119] His work, both promotionally and educationally, centered in these marginal regions.

Shaw represented the predominant trends of the later dry-farming propaganda in Montana—that is, of the period up to the collapse of the settlement boom in the early twenties.[120] His program incorporated many of the elements emphasized by the Department of Agriculture; but it rested on

[112] *Ibid.*, 125–128.

[113] *Ibid.*, 143–145.

[114] *Ibid.*, 9–10, 146–158, 165–167, and *passim; Wibaux Pioneer*, Sept. 9, 1910; *Plentywood Herald*, May 12, 1911.

[115] Shaw, *Dry Land Farming*, 168–170, and *passim;* Shaw, "Dry Farming Methods and Rotation," in Dry Farming Congress, *Proceedings . . . Spokane . . . 1910*, 515; *Havre Promoter*, Mar. 17, 1911; *Havre Plaindealer*, June 19, 26, Oct. 9, 1915; *Plentywood Herald*, July 21, 1911, Mar. 28, 1913; *Wibaux Pioneer*, Mar. 8, 15, 1912; *Williston Herald*, Apr. 6, 1910.

[116] Shaw, "Dry Farming Methods and Rotation," in Dry Farming Congress, *Proceedings . . . Spokane . . . 1910*, 516. See also his report to Louis W. Hill, summarized in *Williston Herald*, Apr. 5, 1911.

[117] W. P. Kirkwood, "Montana, a Coming Wheat State," *Northwestern Miller*, 92:82 (Oct. 9, 1912). Cf. *Fergus County Argus*, Aug. 19, 1910.

[118] Shaw, *Dry Land Farming*, 55.

[119] *Ibid.*, 12, 14.

[120] Many changes in recommended dry-farming procedures have come as a result of the disastrous droughts at this time and in the thirties. Much land has been marked for return to grazing purposes. For that remaining in cultivation, farming practice continues to emphasize the summer fallow system but with drastic changes to meet the danger of soil blowing. Strip cropping has very generally replaced the broad tracts formerly left fallow. Cultivation is now limited to that necessary to prevent weed growth. A cloddy mulch has supplanted the fine tilth, by which the phrase "dust blanket" was erroneously identified with Campbell's program. The duckfoot cultivator now receives the favor once accorded the disc harrow. Plowing is recommended for a given tract only every fourth or sixth year, and subsurface packing is no longer discussed in experiment station bulletins. The cultivated corn crop is still recognized as a desirable substitute for part of the acreage in fallow, but the altitude at which corn can be raised practicably is now known to be limited at about 3,500 feet above sea level. Above all, the approved farm organization has been scaled to double or triple the acreage handled in the small farm economy of the propaganda period. For discussion of these and other changes see, in particular, E. A. Starch, *Farm Organization as Affected by Mechanization* (Montana Agricultural Experiment Station, *Bulletin 278*, Bozeman, 1933); M. P. Hansmeier, *Soil Drifting on Cropland in the Plains Area of Montana. . . .* (Montana Extension Service, *Bulletin 176*, Bozeman, 1939).

the procedural foundation which Campbell had stressed, and it stemmed from promotional interests far more directly than Campbell's ever had in Montana. Locally the success of the agricultural scientists in discrediting Campbell was a hollow victory. Dependent for the most part upon the experiment stations and newspapers for transmission of its views to the farmers, the Department of Agriculture failed in its effort to express its doubts regarding dry-farming procedures. The ultimate conclusions of the Department's experimental program do not appear to have been even reported. Unfortunately the experiment station's stand in opposing the promotional aspects of the dry-farming propaganda was no more successful. In granting Shaw the recognition implicit in his appearance on the farmers' institute system, the station contributed to the dissemination of a small-farm program which differed little from that of the farming belt to the east, a far cry from the vision of a stock-farming economy which had given rise to Director Linfield's original enthusiasm for dry-land agriculture.

Whether agricultural scientists could have controlled the dry-farming movement is doubtful; the commercial interests ranged in its support were very powerful. The fact is, however, that initially agricultural scientists held the leadership. In Montana they compromised this position by statements of conclusions issued before their experiments were subjected to the severe drought conditions known to occur in the area. Moreover, they shared their role of authority in turn with Campbell and with Shaw, both identified with promotional groups. Meanwhile, the United States Department of Agriculture maintained a prolonged attitude of negation, with its spokesmen doubtful of the general efficacy of practices which they had themselves earlier recommended, yet unable to provide the specialized guidance which they demanded. The primary weakness lay in the fact that agricultural research on dry-farming technique had not progressed sufficiently to formulate conclusions when the need arose. Secondary in point of time, but little less important in effect, was the lag in development of scientific media for extending agricultural education.[121] Both failures contributed to the transition of dry-land agriculture into a settlement propaganda. Premature endorsement of the dry-farming movement by agricultural scientists lent powerful support to promotional literature, and the lack of a comprehensive scientific program contributed to reliance upon such systems as those of Campbell and Shaw. Finally, the genuine need for instruction in the agricultural problems of the area opened the way for publicists as expositors. As a result the settlers drawn into the region conducted the dry-farming experiment.

[121] These weaknesses, it should be noted, stemmed from lack of legislative foresight on both the State and the national level. The lamentably inadequate funds under which the Montana station operated until the railroads offered their assistance severely restricted its operations, and the need to win popular support for expenditure in dry-land research doubtless explains the premature enthusiasm for this work expressed by station leaders.

THE AGRICULTURE OF ENGLAND AND WALES, 1939–1946

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One of the most distinctive features of Great Britain's agricultural land use before World War II was the small amount of plowed land. There had been a steady decline in cultivation from 1870 to 1939, interrupted only temporarily during World War I. On a narrow section of the eastern plain of England from the Humber to the Thames was the only major exception to the dominant grassland farming pattern in 1939. Only east of a line roughly from Newcastle to the Isle of Wight and on the southwest peninsula was there generally more than one-quarter of the land under cultivation in 1939 (Figure 1-A). Today the pattern and intensity of land use in Britain is rather markedly changed. There is now more land tilled in all of the lowlands and valleys than ever before in Britain's history—even more than during that period of the industrial revolution prior to competition from the great regions of surplus agricultural production overseas. The change has

been most pronounced in the south Midlands and the lowlands between the mouth of the Severn and the Mersey in the west of England. There the climate is more similar than elsewhere in England to that of the Eastern Counties. There also—especially in the south Midlands—had been the greatest decline in farm population and arable land between the World Wars, coincident with the development of new industries. Traveling westward from the Eastern Counties to the Midlands today one sees a less sharp contrast in the proportion of the land under cultivation and in land use than that which existed in 1939 (Figure 1-A, 1-B).

During the first four years of World War II the farmers of the United Kingdom increased their arable land from 12.9 to 19 million acres. To accomplish the task they used more scientific practices and more machinery than they had used before the war. The number of farm tractors, for example, increased from 50,000 in 1939 to 150,000 in 1944.[1] The land that they brought under the plow was all former permanent pasture. The loss of grassland was partly compensated by more intensive production of feedstuffs. The British effort to maintain the greatest possible degree of agricultural self-sufficiency has not abated since the end of the war. Some of the wartime agricultural changes in the landscapes of the British Isles have not disappeared, nor have there been any clear signs that they are going to disappear. These changes were greatest in England. Of the total addition to the arable land of the United Kingdom since 1939, 92 percent is in England and Wales. This study deals with changes in those two countries.[2]

Changes in Percent of Total Area Cultivated. In 1939 the arable land of England and Wales totaled 8.9 million acres. The arable area rose to a peak of 14.6 million acres in 1944 and decreased slightly to 14.3 million acres in 1946, the first full year after World War II. Planned agricultural production for 1947 called for no essential change from 1946. Thus the percentage of the total area of England and Wales used for growing crops has increased from 24 percent to 39 percent. Arable land includes land in rotational hay and pasture; therefore the area actually being tilled in any one year would be somewhat smaller than the above figures indicate. The portion of the arable land area in hay or pasture in rotation for all of England and Wales was 22 percent in 1939, 21 percent in 1943, and 26 percent in 1946.

The most intensively cultivated part of England is centered in the Fens district. In the belt from the Humber to the Thames estuary on the eastern plain, the proportion of the total area of each county used for cultivation in 1939 was two or more times that of any other part of England except Cornwall in the southwest. By 1943 the general increase in arable land had reduced the difference between the Eastern Counties and the rest of the country. The change has persisted to the present (Figure 1-B). In 1946 the arable acreage in some counties in the south Midlands and southwest and west of England approximated the 1939 arable acreage in some of the counties on the eastern plain. For example, in 1946 tilled crops or hay and pasture in rotation occupied 47 percent of the area of Cornwall and 46 percent of Warwickshire (in the south Midlands), compared with arable land in 49 percent of Huntingdonshire and 55 percent of West Suffolk (in the Eastern Counties) in 1939. Pembroke, Cardigan, and Anglesey in cool cloudy western Wales had a greater proportion of their total area in arable land in 1946 than had Hampshire or any of the Midlands counties in 1939. In the Pennine Chain and Welsh highlands (e.g., Brecon County, Wales, Figure 3) and in the Eastern Counties (e.g., Isle of Ely, Figure 3) the wartime increment of arable land was relatively small (Figure 1-C). Thus, in terms of proportion of total area in arable land, the contrast between the rough highlands and the rest of England and Wales was sharpened by the great "plow-up" of 1939-1946; meanwhile the contrast between the eastern plain and the rest of the lowlands has diminished.

Changes in Types of Farming. Coincident with the "plow-up" a change in the type of farming has appeared in much of the south Midlands and the west and south of England (Figure 2).[3] In

[1] Montell Ogdon, "United Kingdom Agricultural Production and Price-Support Policy," U. S. Office of Foreign Agricultural Relations, *Foreign Agriculture*, 9:18–30 (February 1945).

[2] All statistical data for this study are taken from the British Ministry of Agriculture and Fisheries' annual mimeographed publication, *Agricultural Returns*, London, 1939 through 1946.

[3] Criteria for determining types of farming are those developed by Richard Hartshorne and Samuel N. Dicken in "A Classification of the Agricultural Regions of Europe and North America on a Uniform Statistical Basis," Association of American Geographers, *Annals*, 25:99–120 (June 1935).

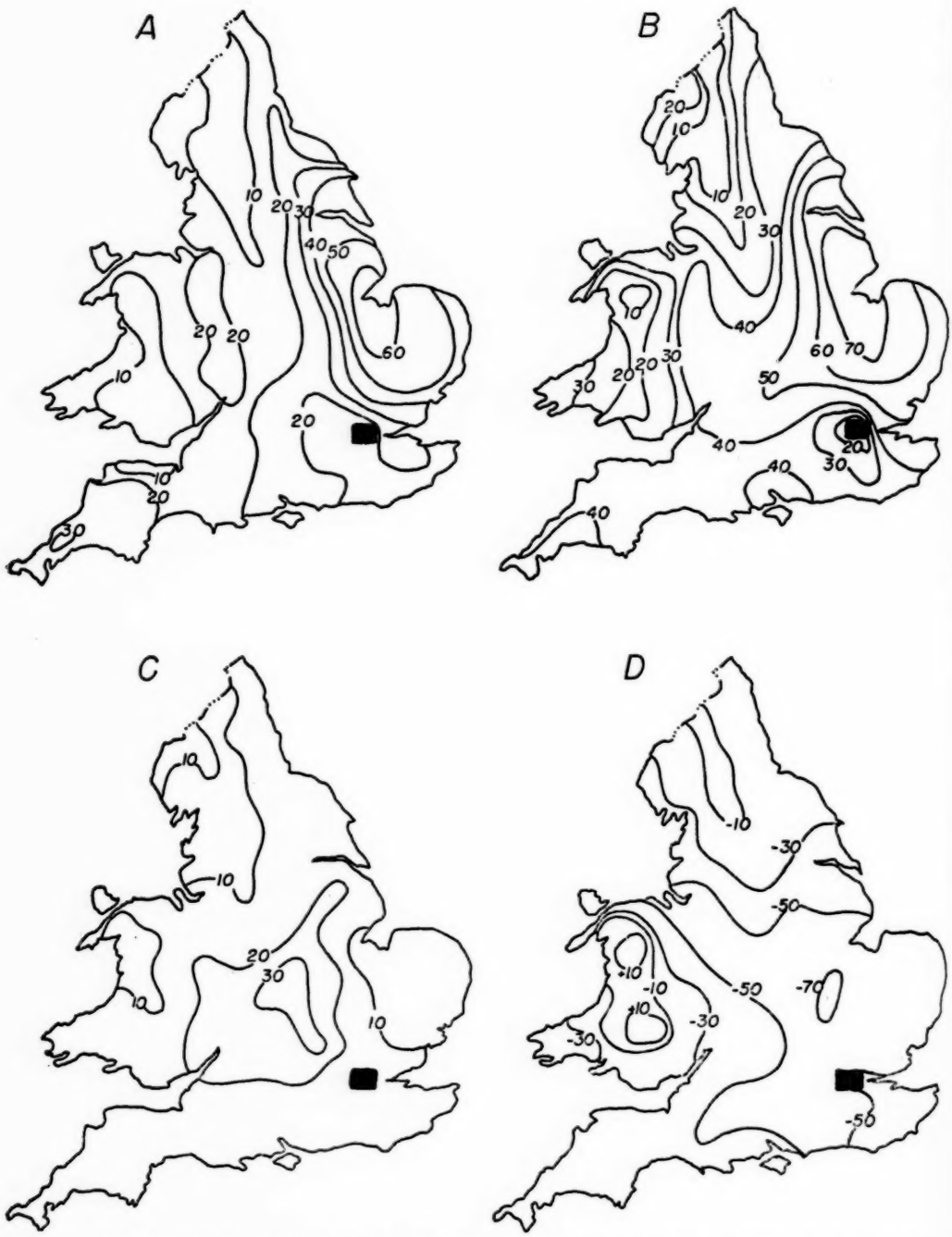

FIGURE 1. A. Percent of area in arable land, 1939. B. Percent of area in arable land, 1946. C. Percent of area added to arable land, 1939–46. Most of the addition took place in the years 1940–43; however, there was no decline at the end of the war, from 1945 to 1946. D. Percent change in number of sheep, 1939–46. The isarithms are based on county statistics used in conjunction with relief maps of the British Isles.

1939 an area of small grains (wheat-oats-barley) and livestock farming covered England's only fairly large intensively tilled area—the belt on the eastern plain from the East Riding of Yorkshire

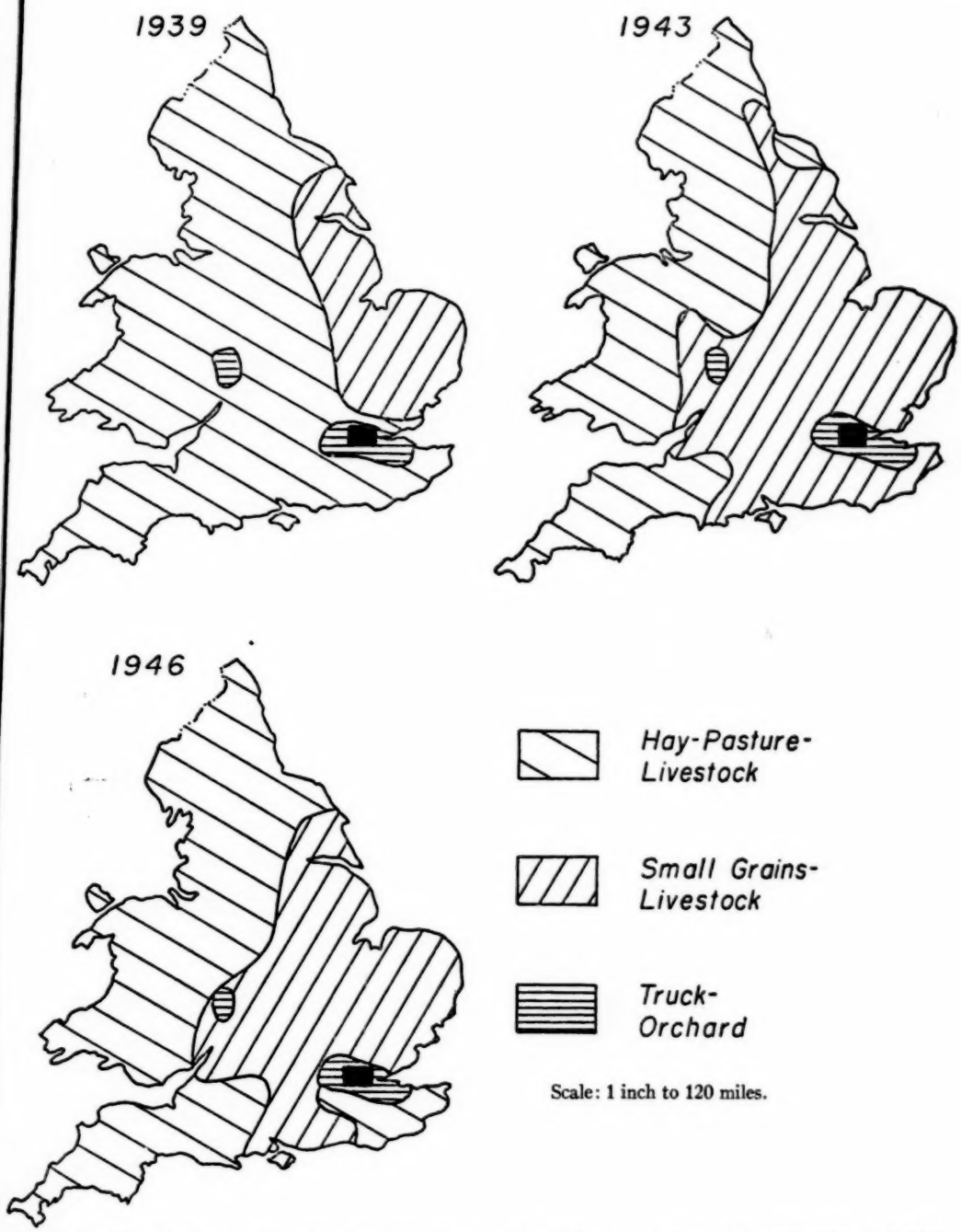

FIGURE 2. Distribution of types of farming (classification of Hartshorne and Dicken) in 1939, 1943, and 1946. Hay-pasture-livestock type: acreage of hay and pasture exceeds that of tilled crops; wheat and rye on less than 10 percent of the used land. Small grains-livestock type: wheat and rye on more than 10 percent of the used land. Commercial orchard-truck farming type: orchard and market vegetables on more than 20 percent of the crop land.

southward to the Thames. Nearly all the remainder of England and Wales was dominated by a hay-pasture-livestock type of farming, concentrating on the production of sheep and cattle

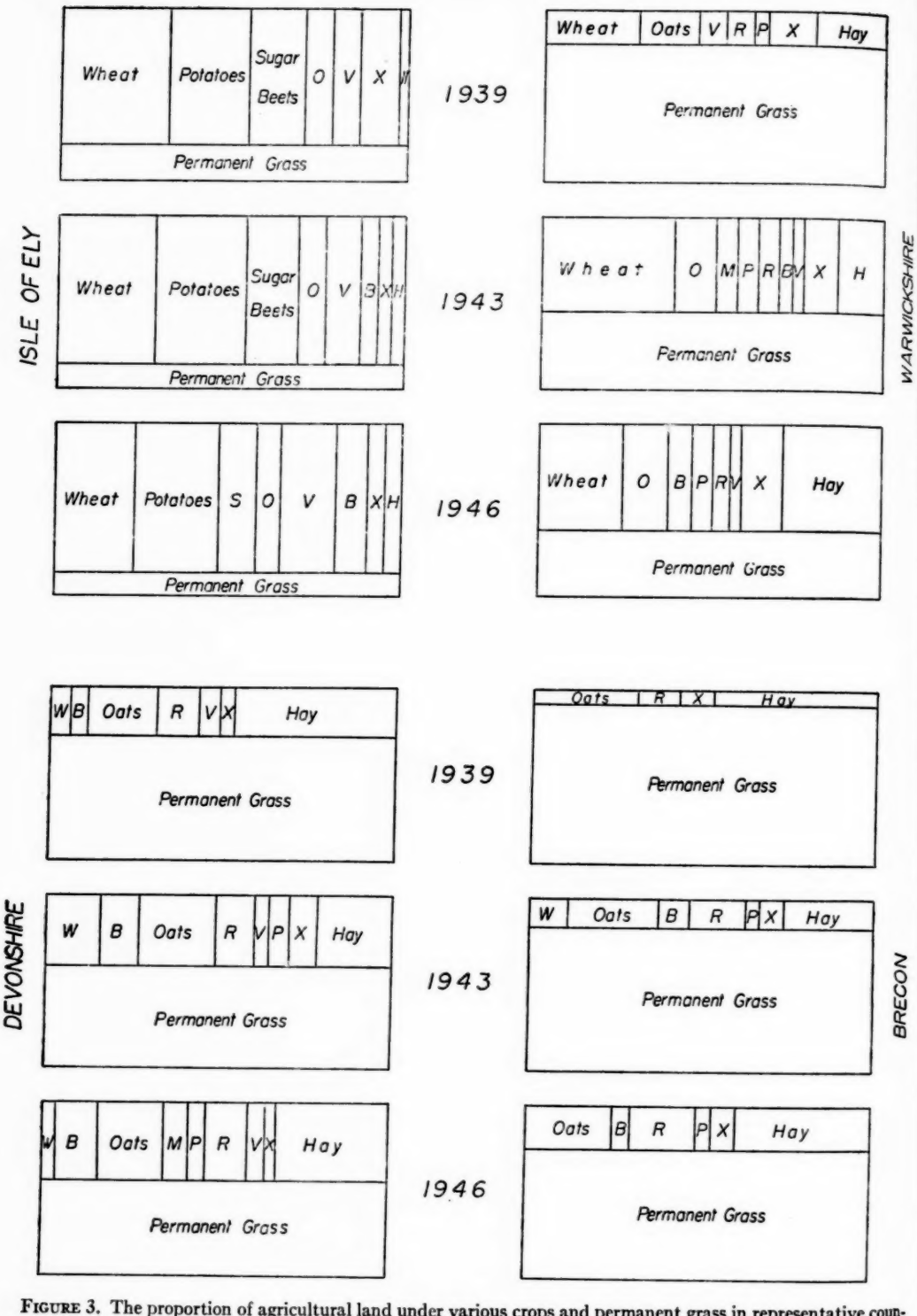

FIGURE 3. The proportion of agricultural land under various crops and permanent grass in representative counties of the Fens on the eastern plain (Isle of Ely), the south Midlands (Warwickshire), the southwest (Devonshire), and the Welsh highlands (Brecon). Farming types are small grains-livestock in the Isle of Ely, and hay-pasture-livestock in the other three counties, with a shift to small grains-livestock in Warwickshire between 1939 and 1943. Letter symbols: B = barley; H = hay; M = mixed grains; O = oats; P = potatoes; R = "root" crops for fodder; S = sugar beets; V = market vegetables and fruit; X = miscellaneous.

for meat and, to a smaller extent, dairy cows. In Worcestershire, in the Severn Valley, and Middlesex and Kent, on either side of London (Figure 2), are areas in which orchards and truck farming prevail. Throughout the period, 1939–46, they have had a higher proportion of their total area devoted to fruit and market vegetable production than any other counties in England.

By 1943 the area of small grains and livestock farming had expanded to cover about three times its 1939 area (Figure 2). There was a corresponding decrease in the area of hay-pasture-livestock farming. The change was the direct result of the government's policy urging and supporting the greatest possible increase in Britain's degree of self-sufficiency in food and feed. Under increased subsidy the wheat area of England and Wales increased from 1.7 to 3.3 million acres from 1939 to 1943.[4] Oats were sown on 1.4 million acres in 1939 and on 2.2 million acres in 1943, and the area of root crops for fodder in England and Wales rose from 800 thousand acres in 1939 to 1.1 million acres in 1943. The expansion of sugar-beet acreage was mostly restricted to the Eastern Counties and was much less in total than the increase in acreage of potatoes, oats, fodder "roots," rye, or barley.

With the increase in tillage and decrease in grassland, there were some drastic changes in livestock population. The number of sheep in England and Wales declined from 18 million in 1939 to 12.6 million in 1944; the much less important pig population dropped from 3.5 to 1.4 million. Meanwhile the number of both beef and dairy cattle increased—the total rose from 6.8 to 7.3 million—coincident with the rapid reduction in number of sheep using the remaining grassland and the increase in acreage of fodder crops. The areas whose cattle herds have increased most since 1939 include the southwestern counties of Devon and Somerset, the Hampshire Basin, western Yorkshire, Lancashire, and the Welsh Highlands. The maximum relative decrease in sheep population was nearly coincident with the area of maximum increase in tilled land (Figure 1-C, 1-D), and is related to the change in the Midlands and southern England to a type of farming more resembling that of the Eastern Counties.

Area graphs of agricultural land use in four counties (Figure 3) show some of the contrasts in crops and amount of land in cultivation in England and Wales before, during, and after World War II. Although there was a general increase in the acreage of cultivated land and a decrease in the acreage of permanent pasture, the most pronounced changes came in the central and south Midlands, typified by Warwickshire. Little land could be added to that already tilled in the Fens (Isle of Ely, Figure 3). The slight decrease in wheat and increase in barley acreage in the latter area is typical of the counties in the "bulge" of eastern England northeast of London. Devonshire is typical of the southwest where the increased arable acreage was used primarily for feed crops and vegetables. Brecon, Wales, is representative of the highland counties whose sheep population remained practically unchanged during the war years and whose land remained predominantly in grass.

TABLE 1

Changes in the Sources of Farm Income, 1938–1943

	Central Norfolk		*South Essex*	
	1938	*1943*	*1938*	*1943*
Percent of farm in small grains	36	39	17	32
Percent of farm in permanent pasture	29	24	71	44
Percent of income from livestock and livestock products	59	43	80	51

Source: A. W. Menzies-Kitchin and W. D. Chapman, "War-Time Changes in the Organisation of Two Groups of Eastern Counties Farms," *Economic Journal*, 56:57–85 (March 1946).

Where the decline in livestock and the increase in arable land were greatest, the process was accompanied by an important decline in the economic importance of livestock and livestock products to the farmers. Table 1 indicates the changes in the sources of farm income because of the plow-up program between 1938 and 1943. The comparison is between 25 small-grains-livestock-type farms in central Norfolk and 25 former hay-pasture-livestock-type farms in south Essex, near London, where the chief emphasis before the war had been on dairy cattle. On the latter

[4] In spite of the expansion of wheat growing into areas with less favorable soils and climate than the plain of eastern England, the average yield per acre for the whole of England and Wales increased slightly from 1939 to 1946, although much of the wheat produced in the new areas was extremely soft.

farms the heavy clay soil was drained and brought under cultivation. Accompanying the shift in emphasis from pasture to tillage there was a great increase in the dependence of the south Essex farms upon subsidies and price supports.[5]

Thus, measured in terms of land use and in terms of source of farm income, the type of farming in England and Wales has moved in varying degrees toward that which has been typical of East Anglia. The greatest change in type of farming—like the change in proportion of arable land—has come in the south Midlands.

Permanence of the Change. There is the question of the relative permanence of this departure from the prewar pattern of British agricultural land use. The government's new agricultural bill aims to use "... to the fullest possible extent the country's relatively limited resources of land. ..."[6] Announced wheat acreage goals through 1948 call for no essential change from 1946, which, in turn, showed no essential change from the last two war years. Although the government's long-term policy is to encourage a shift away from the production of crops for direct human use, the policy can only be carried out as Britain's buying power overseas increases. If there is an eventual decline to prewar wheat acreage, however, it is not expected to alter the effort to maintain greater self-sufficiency in feed grains than before the war, which makes a high level of land under cultivation and of oats and barley production quite likely.[7] Thus the wartime expansion of the small-grains-livestock type of farming, with wheat an important crop, appears less likely to persist permanently than the great increase in arable land which transformed Britain's countryside. Whether or not the extensive "plow-up" of 1939–43 and the maintenance of the resulting changes down to the present time represents a permanent change, it is an important chapter in the history and geography of British agriculture.[8]

[5] A. W. Menzies-Kitchin and W. D. Chapman, "War-Time Changes in the Organisation of Two Groups of Eastern Counties Farms," *Economic Journal*, 56:57–85 (March 1946). The authors showed that without benefit of subsidies the farms which they sampled in central Norfolk would have operated at a loss both before and during the war.

[6] British Information Services, *Labor and Industry in Britain*, 5:34 (February 1947).

[7] U. S. Office of Foreign Agricultural Relations, *Foreign Crops and Markets*, 54:271–272 (Apr. 14, 1947).

[8] For a somewhat different approach to this subject, see L. Dudley Stamp, "Wartime Changes in British Agriculture," *Geographical Journal*, 109:39–58 (July 1947). For very detailed information on prewar land use and types of farming, see the Land Utilisation map based on the Land Utilisation Survey of Britain made under Dr. Stamp's direction from 1931 to 1939 and the Ministry of Agriculture and Fisheries Types of Farming map. These maps were published by the British Ordnance Survey in 1942 and 1944 respectively.

NEWS NOTES AND COMMENTS

OLD ENGLISH FARMING BOOKS

G. E. Fussell's volume, *The Old English Farming Books from Fitzherbert to Tull, 1523 to 1730* (Crosby Lockwood & Son, London, 1947, 141 p., illus. 12/6 net) is delightful and informative reading. It is also a very useful handbook as it supplies a collation of all the editions of the works on farming published in English during the period specified in the title.

The book begins with Fitzherbert's *Boke of Husbondrye* (ed. 1, 1523), the first book on farming that was printed in England, and concludes with the year preceding the appearance of Jethro Tull's *Horse Hoeing Husbandry* (1731). The treatment is in relation to five periods: Tudor Times; The Age of Markham; The Age of Hartlib; The Age of Worlidge and Houghton; and The Age of Richard Bradley. The volume has a list of agricultural and general bibliographies, a list of essays on particular writers contributed by G. E. Fussell to various periodicals, a title index to the works (about 350) considered in the text, and an author index. The illustrations are reproductions of title and sample pages and frontispieces from the works described.

Although the author delineates the limitations of these old farming books as historical sources, he quite justly emphasizes their importance from the viewpoint that there was a public for them. England was primarily an agricultural country and remained so for a considerable time past the concluding date of this volume. Indeed, the stream of books in the English language on farming practices has been continuous from Fitzherbert to the present. Despite their limitations they were an important educational media.

This volume is a significant and useful addition to the literature on agricultural history. We hope that the publisher will encourage the author to prepare a companion volume on the farming books from Tull to the formation of the Board of Agriculture in 1792.

THOMAS JEFFERSON, AMERICAN TOURIST

When Edward Dumbauld, the author of *Thomas Jefferson, American Tourist: Being an Account of His Journeys in the United States of America, England, France, Italy, the Low Countries, and Germany* (University of Oklahoma Press, Norman, 1946, 266 p., illus. $3.00), was a student in Europe, he tried to follow Jefferson's footsteps as a sightseer in Paris, Nimes, and other places but found it difficult to do so because of the lack of a commentary on the subject. To provide the volume needed for this purpose, the author has gleaned data from a multitude of unpublished manuscripts, scattered in many collections, as well as much printed material.

The success of this undertaking is somewhat uneven. Students of agricultural history will be especially interested in chapters 4, 5, and 6 on Jefferson's travels in Europe. These chapters together with chapter 1 on the difficulties of travel in Jefferson's day and chapter 10 on Jefferson's ideas concerning the advantages and disadvantages of foreign travel are very interesting and valuable contributions not only to general readers but to Jefferson scholars. In contrast chapters devoted to the parts of the United States having association with Jefferson fall short of distinction in their execution. This situation is probably accounted for in large part by the fact that few of the places described acquired uniqueness by virtue of Jefferson's association with them. The appendix that provides a carefully prepared chronological itinerary of Jefferson's travels at home and abroad from 1775 to 1791 and the table of his trips as Secretary of State, Vice President, and President to the national capital will save much time for many scholars. The bibliography is also very useful.

CALIFORNIA AGRICULTURE

California Agriculture (University of California Press, Berkeley and Los Angeles, 1946, 444 p. $5.00), by members of the faculty of the California College of Agriculture, is one of a series prepared in commemoration of the seventy-fifth anniversary of the University of California. Quite properly, therefore, the basic emphasis is on the history of the scientific achievements of the College of Agriculture and its affiliated units.

Strictly considered the volume is not a history of actual farming practices in California, but it is a valuable and scholarly historical survey of the State's agricultural problems and achievements. This undertaking was far from easy to execute because the unusual range of environmental factors in California has dictated diversity and multiplicity of agricultural endeavor. As Dean Claude B. Hutchison points out in the preface, California now has 118 distinct types of farming areas as compared with its nearest competitor, Pennsylvania, which has a mere 25.

The book has six sections, each written by different authors. The first, covering the century from the arrival in San Diego in May 1769 of the first cattle herd to the completion of the Pacific Railroad in May 1869, is by Frank Adams. Next is a section on livestock by George H. Hart and collaborators and one on crops by Warren P. Tufts and collaborators. These are followed in turn by a consideration of the more specialized and technical subjects of pests and diseases by Ralph E. Smith and associates and soil, fertilizer, and irrigation problems by Hans Jenny and others. The final section

is an analysis of the economic and social structure of California agriculture by M. R. Benedict.

Critics can suggest that the sections of the book are not closely integrated. They may also deplore the inadequacy of the index as a key to the vast compendium of facts provided by the text and the lack of bibliographical data. Yet, in spite of these and similar faults, the volume is a valuable and useful contribution to the history of agriculture in California.

IOWA AGRICULTURE

A Century of Farming in Iowa, 1846–1946 (Iowa State College Press, Ames, Iowa, 1946, xiv, 357 p., illus. $5.00), by members of the staff of the Iowa State College and the Iowa Agricultural Experiment Station, is published in commemoration of the centennial anniversary of Iowa's statehood. It consists of twenty-seven chapters by specialists at the great agricultural research center at Ames on practically every aspect of Iowa agriculture. "An Overview" by Professor Earle D. Ross provides an interpretative introduction on the nature and importance of Iowa's agricultural history.

As separate entities the chapters of this book are excellent. They contain a great deal of useful information and much that is new. Outstanding is the attention given to the research contributions of the staff at Ames. Certainly these contributions are part of the epical story, A Century of Farming in Iowa, but in the process of execution, they became the main unifying element in the volume. The farmers of Iowa and their actual farming practices are not, despite the title, the central theme. In addition, it may be noted that the book, like its counterpart on California, lacks an adequate index and has no bibliography. In these respects a disservice has been committed against the subject matter embodied in the text.

Despite these criticisms the book is a vast mine of historical information on the agriculture of Iowa. It is a scholarly and useful contribution to American agricultural history. We greatly need comparable volumes on other States by their agricultural specialists.

DEAN CARMAN'S JESSE BUEL

Dean Harry J. Carman's *Jesse Buel, Agricultural Reformer* (Columbia University Press, New York, 1947, xxxvi, 609 p. $6.75), is number 12 of the Columbia University Studies in the History of American Agriculture. The introduction to the volume (p. xv-xxxvi) is an expansion of the excellent interpretative summary of Buel's life which Dean Carman gave as his presidential address before the Agricultural History Society on May 19, 1942. The main body of the volume consists of edited selections from Buel's writings on agriculture.

The selections provide a self-portrait of Buel as well as data on the improved agricultural methods that he promoted during the years 1821–1839. The first section (p. 3–129) is devoted to correspondence, editorials, and articles by Buel from *The Cultivator* and other farm periodicals. The second (p. 133–255) provides the texts of Buel's addresses before agricultural and horticultural societies. The third section (p. 259–586) is a reprinting of the 1839 edition of Buel's famous book, *The Farmer's Companion*, and its appendices.

The Farmer's Companion ranks high in the history of agricultural literature, and all who are concerned with the history of agriculture are indebted to Dean Carman for making an edited text available. The book was originally prepared at the request of the Massachusetts Board of Education for use in the school and rural libraries of that State. Its twenty-seven chapters are a summary of Buel's agricultural experience and wisdom. They cover practically every phase of husbandry as practiced at the time and reveal the author as an agricultural statesman of major rank.